December 18, 2002

Re: Iron Dynamics, Inc. 033-15955-00076

TO: Interested Parties / Applicant

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision - PSD Permit Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision on the enclosed Prevention of Significant Deterioration (PSD) Permit. Pursuant to IC 13-15-5-3 and the federal requirements codified at 40 CFR Part 124.15 (b), this permit is effective thirty (30) days after the service of this notice. This permit may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1 require that you file a petition for administrative review. This petition describing your intent must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within eighteen (18) days of service of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location and date of this notice. Additionally, IC 13-15-6-2 requires that a petition include:

(1) the name and address of the person making the request; and
(2) the interest of the person making the request; and
(3) identification of any persons represented by the person making the request; and
(4) the reasons, with particularity, for the request; and
(5) the issues, with particularity, proposed for consideration at the hearing; and

(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

(over)

If you wish to challenge this decision under federal law, 40 CFR 124.19 requires that you petition the Environmental Appeals Board **within thirty (30) days of the service of this notice**, at the following address:

U.S. Environmental Protection Agency
Environmental Appeals Board (MC-1103B)
Ariel Rios Building
1200 North Pennsylvania Ave., N.W.
Washington, D.C. 20406

Pursuant to 40 CFR Part 124.19, the petition must include a statement of the reasons supporting review, including a demonstration that any issues being raised were raised during the public comment period or public hearing. When appropriate, the petition must also include a showing that the permit condition in question is based on:

(1) a finding of fact or conclusion of law which is clearly erroneous; or,
(2) an exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

Pursuant to 40 CFR Part 124.19, the Environmental Appeals Board shall provide public notice of any grant or review. Notice of denial or review shall be sent only to the person(s) requesting review.

If you technical questions regarding the enclosed document, please call the Office of Air Quality, Permits Branch at 317-233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178

Enclosures

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

PART 70 SIGNIFICANT SOURCE MODIFICATION AND MAJOR MODIFICATION UNDER PREVENTION OF SIGNIFICANT DETERIORATION

OFFICE OF AIR QUALITY

Iron Dynamics, Inc.
4500 County Road 59,
Butler, Indiana 46721

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This permit is issued under the provisions of 326 IAC 2 and 40 CFR Part 52.21 (Prevention of Significant Deterioration) and 40 CFR 124 (Procedure for Decision Making), with conditions listed on the attached pages.

This approval is also issued in accordance with 40 CFR 70 Appendix A and Contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et.seq. (Clean Air Act as amended by the 1990 Clean Air Act amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Significant Source Modification No.: 033-15955-00076	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: December 18, 2002

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a Direct Reduced Iron facility.

Responsible Official:	Mark Millett
Source Address:	4500 County Road 59, Butler, Indiana 46721
Mailing Address:	4500 County Road 59, Butler, Indiana 46721
General Source Phone Number:	219-868-8000
SIC Code:	3312
County Location:	DeKalb
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This modification to a stationary source is approved to make the following changes to the existing emission units and pollution control devices:

(a) use of Electric Arc Furnace (EAF) baghouse dust as a supplemental feed material for the RHF.

(b) addition of a 100,000 dscfm air flow baghouse to control fugitive emissions from the Rotary Hearth Furnace (RHF) exhausting to the stack identified as 77.

(c) increasing the air flow rate by 100,000 dscfm for the Submerged Arc Furnace (SAF) existing baghouse.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This modification to a stationary source does not involve any insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, the effective date of this permit will be thirty (30) days after the service of notice of the decision, as comments were received during the public comment period for this permit. Three (3) days shall be added to the thirty (30) day period if service of notice is by mail.

B.3 Permit Expiration Date [326 IAC 2-2-8(a)(1)] [40 CFR 52.21(r)(2)]

Pursuant to 40 CFR 52.21(r)(2) and 326 IAC 2-2-8(a)(1) (PSD Requirements: Source Obligation) this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a continuous period of eighteen (18) months or more, or if construction is not completed within reasonable time. IDEM may extend the eighteen (18) month period upon satisfactory showing that an extension is justified.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application or the permit. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of that rule and the provisions of 326 IAC 2-2 and an Operation Permit Validation Letter is issued.

(c) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is not regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of 326 IAC 2-7-10.5 and the provisions of 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

(e) In the event that the Part 70 application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Part 70 draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Part 70 draft.

(2) If the Part 70 permit has gone through final EPA proposal and would be issued

ahead of the Significant Source Modification, the Significant Source Modification will go through a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Part 70 permit at the time of issuance.

(3) If the Part 70 permit has gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, or its equivalent, with each submittal requiring certification.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6 (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each control device:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The PMP does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation.

(d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Inspection and Entry [326 IAC 2-7-6]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this approval;

(b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this approval or any operating permit revisions;

(c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this approval or any operating permit revisions;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this approval or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this approval or applicable requirements.

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 18 months after issuance of the validation letter, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality

100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation no later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared before the affidavit of construction is submitted to the IDEM, supplemented from time to time by the Permittee, maintained on site, and comprised of:

(1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

(2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

(1) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.

(2) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(3) Failure to take reasonable response steps shall constitute a violation of the permit.

(c) The Permittee is not required to take any further response steps for any of the following reasons:

(1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.

(3) An automatic measurement was taken when the process was not operating.

(4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.

(d) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

(e) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.13 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) Pursuant to 326 IAC 2-7-16 (b) an emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable

requirement.

(e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, not later than thirty (30) days after receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed not later than one hundred twenty (120) days after receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when the new or modified equipment begins normal operation.

C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

(a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted no later than thirty (30) days after the end of the reporting period. All reports unless otherwise specified do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(e) The first report shall cover the period commencing on the date of submission of affidavit of construction and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

(a) use of Electric Arc Furnace (EAF) baghouse dust as a supplemental feed material for the RHF.

(b) addition of a 100,000 dscfm air flow baghouse to control fugitive emissions from the Rotary Hearth Furnace (RHF) exhausting to the stack identified as 77.

(c) increasing the air flow rate by 100,000 dscfm for the Submerged Arc Furnace (SAF) existing baghouse.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) - Best Available Control Technology [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the PM/PM10 (where PM 10 includes both filterable and condensable components) emissions from the rotary hearth furnace process baghouse shall not exceed an air flow rate design of 310,000 dscfm (353,000 acfm) and 0.0052 grains per dscf through stack 40. The total per hour emissions shall not exceed 13.4 pounds.

(b) Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements), the PM/PM10 (where PM 10 includes both filterable and condensable components) emissions from the rotary hearth furnace associated discharge chute baghouse shall not exceed an air flow rate design of 100,000 dscfm and 0.0052 grains per dscf through stack 77. The total per hour emissions shall not exceed 4.46 pounds.

D.1.2 Opacity Limitation - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the visible emissions discharged into the atmosphere from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) shall each be limited to three percent (3%) opacity in accordance condition D.1.18. determined by a six (6) minute average (24 reading taken in accordance with EPA Method 9, Appendix A).

D.1.3 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the nitrogen oxide(s) emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by the use of low-NOx natural gas-fired burners and a selective non-catalytic reduction unit. Except during periods of startup or shutdown, the total emissions shall not exceed 1.25 pounds per ton of material charged into the furnace and 120 pounds per hour.

The SNCR system shall be operated in a manner recommended by the manufacturer and good work practices to minimize the NOx emissions and ammonia slip.

The condition D.1.3 in this permit supersedes the Operating Condition 24 in the CP 033-8091-00043, and condition D.1.3 in the MSM 033-13911-00076.

D.1.4 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043,

issued on June 25, 1997, except during periods of startup or shutdown, the carbon monoxide emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by afterburner and operated at a temperature exceeding two thousand six hundred (2,600)^{o}F and emissions shall not exceed 100 ppm and 114,519 ug/m3. The total emissions per hour shall not exceed 146.8 pounds.

The condition D.1.4 in this permit supersedes the Operating Condition 25 in the CP 033-8091-00043, and condition D.1.4 in the MSM 033-13911-00076.

D.1.5 Volatile Organic Compounds (VOC)

Pursuant to CP-033-8091-00043, issued on June 25, 1997, except during periods of startup or shutdown, the volatile organic compound emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by an afterburner and operated at a temperature exceeding two thousand six hundred (2,600) ^{o}F and emissions shall not exceed 0.06 pounds per ton of material charged into the furnace. The total emissions shall not exceed 6.23 pounds per hour.

The condition D.1.5 in this permit supersedes the Operating Condition 26 in the CP 033-8091-00043, and condition D.1.5 in the MSM 033-13911-00076.

D.1.6 Sulfur Dioxide (SO2) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the sulfur dioxide emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by lime injection, wet scrubber and/or use of EAF dust as supplemental feedstock. The SO2 emissions shall be limited as follows:

(a) When using lime injection or wet scrubber as control, SO2 emissions shall not exceed 0.75 pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed 78 pounds per hour.

(b) When using at least 2 tons per hour of EAF dust as supplemental feedstock as control, SO2 emissions shall not exceed 0.4 pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed 39.0 pounds per hour. If the stack test required under Condition D.1.16 shows that this limitation is not achievable in practice, the Permittee can request the Department to re-evaluate the D.1.6 (b) to adjust this limitation to reflect the control efficiency observed in the test. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit modification.

The condition D.1.6 in this permit supersedes the Operating Condition 27 in the CP 033-8091-00043, and condition D.1.6 in the MSM 033-13911-00076.

D.1.7 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]

(a) Pursuant to CP-033-8091-00043, issued on June 25, 1997, lead emissions from the rotary hearth furnace process baghouse (Stack 40) shall not exceed 0.00058 pounds per ton of material charged into the furnace and 0.0557 pounds per hour. The condition D.1.7 in this permit supersedes the Operating Condition 24 in the CP 033-8091-00043, and condition D.1.7 in the MSM 033-13911-00076.

(b) The lead emissions from the rotary hearth furnace associated discharge chute baghouse (Stack 77) shall not exceed 0.019 pounds per hour.

D.1.8 Startup and Shutdown Emissions - Best Available Control Technology [326 IAC 2-2-3]

(a) Startup is defined as the duration from the first firing of burners in the RHF to the time when the RHF exhaust gas temperature is within the optimum ranges of the operation of control devices for NOx, CO and VOC emissions.

(b) Shutdown is defined as the duration from first curtailment of fuel input to the RHF burners with the intent of full shutdown to the final complete stop of fuel input and complete cessation of combustion in the RHF.

(c) The RHF shall be operated in a manner consistent with good air pollution control and work practices to minimize emissions during startup, and shutdown by operating in accordance with written procedures developed and maintained by the Permittee, which shall include at a minimum the following measures:

1. Review of operating parameters of the unit during startup, or shutdown as necessary to make adjustments to reduce or eliminate excess emissions;

2. Operate emission control equipment as soon as the RHF exhaust gas temperature reaches the lower value of the optimum temperature range for the control equipment. This operation shall continue until the time the RHF shutdown sequence is initiated with the intention of shutdown of the unit; and

3. Implementation of inspection and repair procedures for the RHF and the emissions control equipment prior to attempting startup to ensure proper operation.

D.1.9 Particulate Matter (PM) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements), the PM/PM10 emissions from the SAF stack (No. 58) shall not exceed 0.0032 grains per dry standard cubic foot. At a maximum air flow rate of 300,000 standard cubic feet per minute, this limit is equivalent to 8.23 pounds of PM/PM10 per hour. The operation condition 22 for PM/PM10 emissions from the SAF in the CP 033-9187-00043 is superceded by condition D.1.9 in this permit.

D.1.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the control devices for the rotary hearth furnace process baghouse (Stack 40), associated discharge chute (Stack 77), and the submerged arc furnace (Stack 58).

Compliance Determination Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.11 Particulate Matter (PM/PM10) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements), the baghouse for PM/PM10 control shall be in operation and control emissions from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute (Stack 77) at all times the rotary hearth furnace is in operation to comply with the limitations in conditions D.1.1, D.1.7 and D.1.8.

D.1.12 Nitrogen Oxides (NOx) [326 IAC 2-2-3]

Pursuant to CP-033-8091-00043, issued on June 25, 1997, except during periods of startup or shutdown, the selective non-catalytic reduction unit for NOx control shall be in operation and control emissions from the rotary hearth furnace process baghouse (Stack 40) at all times the rotary hearth furnace is in operation to comply with the limitations in condition D.1.3.

D.1.13 Carbon Monoxide (CO) and Volatile Organic Compounds (VOC) [326 IAC 2-2-3]

Pursuant to CP-033-8091-00043, issued on June 25, 1997, except during periods of startup or

shutdown, the afterburner for control of carbon monoxide and volatile organic compounds shall be in operation and control emissions from the rotary hearth furnace process baghouse (Stack 40) at all times the rotary hearth furnace is in operation to comply with the limitations in conditions D.1.4 and D.1.5.

D.1.14 Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to CP-033-8091-00043, issued on June 25, 1997, the lime injection or wet scrubber unit for sulfur dioxide control shall be in operation and/or use of EAF dust as supplemental feedstock in the RHF to control emissions from the rotary hearth furnace process baghouse (Stack 40) at all times the rotary hearth furnace is in operation to comply with the limitations in condition D.1.6.

D.1.15 Particulate Matter (PM/PM10) [326 IAC 2-2-3]

Pursuant to CP-033-9187-00043, issued on March 24, 1998, the baghouse for PM/PM10 control shall be in operation and control emissions from the submerged arc furnace at all times the submerged arc furnace is in operation to comply with the limitations in condition D.1.9.

D.1.16 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within 60 days of achieving maximum production rate, but no later than 18 months after issuance of the operation permit validation letter, for the rotary hearth furnace process baghouse (Stack 40) and the submerged arc furnace (Stack 58), in order to demonstrate compliance with conditions D.1.1 (a) through D.1.4, D.1.6 and D.1.9 the Permittee shall perform PM, PM10, NOx, CO and SO2 testing on the RHF process baghouse (Stack 40) and PM/PM10 testing on the SAF (Stack 58) utilizing methods as approved by the Commissioner. The PM-10 includes both filterable and condensable components.

(b) During the timeframe mentioned in the item (a) of this condition, the Permittee shall perform PM/PM10 testing for the RHF associated discharge chute baghouse (Stack 77) in order to demonstrate compliance with condition D.1.1 (b), utilizing methods as approved by the Commissioner. The PM-10 includes both filterable and condensable components.

(c) During the timeframe mentioned in the item (a) of this condition, the Permittee shall analyze the EAF baghouse dust for the hazardous components. The Permittee shall calculate the hourly HAP emissions assuming 100% vaporization of the hazardous components identified previously for the rotary hearth furnace process baghouse (Stack 40), using the highest throughput rate in tons per hour of EAF baghouse dust achieved during this period. This mass balance computation shall be converted to annual emissions, assuming 8760 hours of operation in a year, and used to establish that the single HAP emissions are less than 10 tons per year, and the combination of HAPs emissions are less than 25 tons per year pursuant to 326 IAC 2-4.1-1. In the event that the HAP emission exceed the threshold stated earlier, the Permittee shall inform the IDEM, OAQ about the same, and curtail the operation of the RHF in a manner, not to exceed the thresholds specified in this condition.

All testing (except testing of EAF baghouse dust which shall be tested in accordance with SW-846 or other approved methods) shall be conducted in accordance with Section C- Performance Testing. This condition supersedes Operation Condition 7 in the Permit 033-8091-00043 with respect to the rotary hearth furnace part only.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.17 Continuous Emission Rate Monitoring Requirement [326 IAC 3-5]

(a) Pursuant to 326 IAC 3-5-1(d), the Permittee shall install, calibrate, certify, operate, and maintain a continuous monitoring system for measuring NOx, CO, and SO2 emissions rates in pounds per hour from the rotary hearth furnace process baghouse stack

(identified as stack 40) in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.

(b) The Permittee shall submit to IDEM, OAQ, prior to start of operation, a complete written continuous monitoring standard operating procedure (SOP), in accordance with the requirements of 326 IAC 3-5-4.

(c) The Permittee shall record the output of the system and shall perform the required record keeping, pursuant to 326 IAC 3-5-6, and reporting, pursuant to 326 IAC 3-5-7.

Compliance with this condition shall determine continuous compliance with the NOx, CO, and SO2 emission limits under operation conditions D.1.3, D.1.4, and D.1.6, respectively.

D.1.18 Opacity Monitoring on the Rotary Hearth Furnace

The Permittee shall demonstrate compliance with condition D.1.2 by using any of the following methods:

1. Opacity readings by certified opacity observer:

   (a) Opacity from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks shall be performed at least once per shift during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.

   (b) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.

   (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

   (d) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

   (e) Conditions (a) through (c) above are not applicable should a continuous opacity monitor be installed which meet 40 CFR 60, Appendix B, Performance Specification 1, or a bag leak detector is installed as provided in this condition.

2. Install, calibrate, certify, operate, and maintain a continuous opacity monitoring system in accordance with 40 CFR 60, Appendix B, Performance Specification for measuring opacity from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.

   The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

3. Installation and operation of a bag leak detection system. If bag leak detection system is installed, then condition D.1.19 and D.1.20 shall not be applicable. If the bag leak detection system is inoperable, the Permittee shall substitute Conditions D.1.18 (1), D.1.19 and D.1.22 (b) and (c) to show compliance, until the bag leak detection system is operable.

The baghouse leak detection system shall meet the following criteria:

(a) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0052 grains per dry standard cubic foot or less.

(b) The bag leak detection system sensor must provide output of relative particulate matter loading.

(c) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.

(d) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(e) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(f) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.

(g) The bag leak detection system sensors must be inspected monthly and build-up must be removed from probe and insulator.

(h) The Permittee shall perform monthly QA checks including response tests and electronics drift checks and opacity readings to confirm the operation of the baghouse is in order.

(i) The bag detector must be installed downstream of the baghouse.

(j) In the event of a bag leak detection system alarm is triggered, the Permitee shall follow steps in condition D.1.21 of this permit.

(k) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.1.19 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the rotary hearth furnace and submerged arc furnace, at least once per shift when these processes are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records,

and Reports, shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated or replaced at least once every six (6) months.

D.1.20 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the rotary hearth furnace process baghouse and discharge chute baghouse and the submerged arc furnace. All defective bags shall be replaced.

D.1.21 Broken or Failed Bag Detection

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section C- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.22 Record Keeping Requirements

(a) To document compliance with Condition D.1.17, and D.1.18 (2) (if applicable) the Permittee shall maintain records as required under 326 IAC 3-5-6 at the source in a manner such that they may be inspected by IDEM, OAQ or U.S. EPA, if requested.

(b) To document compliance with Condition D.1.18 (1), (if applicable) the Permittee shall maintain records of opacity readings of the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks exhaust once per shift for a period of three (3) years. These records shall be made available to the IDEM, OAQ staff upon request for their review.

(c) To document compliance with Condition D.1.19 (if applicable), the Permittee shall maintain the per shift records of the differential static pressure during normal operation.

(d) To document compliance with Condition D.1.20 (if applicable), the Permittee shall maintain records of the results of the inspections.

(e) To document compliance with condition D.1.18 (3) (if applicable), the Permittee shall maintain records of the dates and times of all bag leak detection system alarms, the cause of each alarm, and an explanation of all corrective actions taken and records of preventive maintenance required by D.1.18 (3) (g) and (h).

(f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.23 Reporting Requirements

The Permittee shall submit on a quarterly basis records of excess opacity, NO_X, SO2 and CO emissions (defined in 326 IAC 3-5-7 and 40 CFR Part 60.7) from the continuous emissions monitoring system and the opacity readings taken. These reports shall be submitted no later than thirty (30) calendar days after the end of each calendar quarter and in accordance with Section C – General Reporting Requirements of this permit.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Phone: 317-233-5674
Fax: 317-233-5967

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Iron Dynamics, Inc.
Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
Permit No.: 033-15955-00076

This form consists of 2 pages Page 1 of 2

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
The Permittee must submit notice in writing or by facsimile within two (2) days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO2, VOC, NOX, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position:_____

Date:_____

Phone:_____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Iron Dynamics, Inc.
Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
Permit No.: 033-15955-00076

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- ☐ Test Result (specify)
- ☐ Report (specify)
- ☐ Notification (specify)
- ☐ Affidavit (specify)
- ☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Iron Dynamics, Inc.
Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
Permit No.: 033-15955-00076

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By:_____

Title/Position:_____

Date:_____

Phone:_____

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office Of Air Quality
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Iron Dynamics, Inc.
4500 County Road 59,
Butler, Indiana 46721

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with Iron Dynamics, Inc., I have personal knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of Iron Dynamics, Inc.

4. I hereby certify that Iron Dynamics, Inc., 4500 County Road 59, Butler, Indiana 46721, has modified the equipment in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on May 02, 2002 and as permitted pursuant to **Source Modification No. 033-15955-00076** issued on

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 20 _____ .

My Commission expires:

_____
Signature

_____
Name (typed or printed)

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document (TSD) for a Part 70 Significant Source Modification and Major Modification for Prevention of Significant Deterioration

Source Background and Description

Source Name:	Iron Dynamics, Inc.
Source Location:	4500 County Road 59, Butler, IN 46721
County:	Dekalb
SIC Code:	3312
Operation Permit No.:	033-12614-00076
Operation Permit Issuance Date:	Not yet issued
Significant Source Modification No.:	033-15955-00076
Permit Reviewer:	Gurinder Saini

On October 07, 2002, the Office of Air Quality (OAQ) had a notice published in the Auburn Evening Star, Auburn, Indiana, stating that Iron Dynamics, Inc., had applied for an approval to modify the existing Rotary Hearth and the Submerged Arc Furnaces. The public notice also stated that the IDEM, OAQ proposed to issue the Significant Source Modification for this operation and provided information on how the public could review the proposed approval and other documentation. Finally, the notice informed interested parties that there was a period until November 06, 2002 to provide comments on the draft permit.

This document contains footnotes as part of the text by IDEM, OAQ and also as part of the text by the commentators. The footnotes by commentators are shown in *Italics* whereas those by IDEM, OAQ are shown in the normal text.

On November 13, 2002, Iron Dynamics, Inc. (IDI) through an electronic mail message partially withdrew the application for the modification request 033-15955-00076. In particular the IDI stated that its request for the replacement of up to 20 natural gas fired burners with dual fuel burners capable of firing coal in place natural gas is being withdrawn.

The IDEM, OAQ revised the following items in the TSD for this permit and are documented here. The calculations for emissions have changed because the replacement of burners with dual fuel burners is no longer part of this project. Therefore a revised appendix A to the addendum to the TSD is attached to this addendum.

The potential to emit calculations in the TSD are revised and are presented below:

Uncontrolled Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the

U.S. EPA."

This table reflects the PTE after controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. In this case, the control equipment is required as part of conditions under the PSD Construction Permit CP 033-8091-00043.

Pollutant	Potential To Emit (tons/year)
PM	114.13
PM-10	114.13
SO_2	~~543.64~~ **341.64**
VOC	~~29.45~~ **27.29**
CO	~~661.02~~ **642.98**
NO_x	~~659.06~~ **525.6**

HAPs	Potential to Emit (tons/year)
~~Acetaldehyde~~	~~0.021~~
~~Acrolein~~	~~0.010~~
~~Arsenic~~	~~0.015~~
~~Benzene~~	~~0.047~~
~~Benzyl Chloride~~	~~0.025~~
~~Beryllium~~	~~0.0008~~
~~Cyanide~~	~~0.090~~
~~Isophorone~~	~~0.021~~
~~Manganese~~	~~0.018~~
~~Mercury~~	~~0.003~~
~~Methyl Chloride~~	~~0.019~~
~~Methyl Ethyl Ketone~~	~~0.014~~
~~Methylene Chloride~~	~~0.010~~
~~Nickel~~	~~0.010~~
~~Propionaldehyde~~	~~0.014~~
~~Selenium~~	~~0.047~~
~~Total HAPs~~	~~0.365~~

Justification for Modification

The Part 70 Source is being modified through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5 (f) (1) because this modification is major for 326 IAC 2-2 (Prevention of Significant Deterioration). This modification is major for PSD review, because the net emissions increase from this modification is greater than significance thresholds under 326 IAC 2-2-1 as explained in the following sections.

Controlled Potential to Emit

The net emissions increase based on future potential to emit and past actual emissions from the proposed modification are (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO_2 (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO_x (ton/yr)	Lead (ton/yr)	~~Beryllium (ton/yr)~~	~~Mercury (ton/yr)~~
Potential emissions from the Proposed modification	114.13	114.13	~~543.64~~ **341.64**	~~27.31~~ **27.29**	~~643.16~~ **642.98**	~~659.06~~ **525.6**	~~0.34~~ **0.32**	~~0.0008~~	~~0.003~~
Past actual emissions for two years (1999-2000) limited operation due to unstable operation	1.79	1.79	6.27	1.26	29.49	24.1	0	~~0~~	~~0~~
Net emissions increase from the proposed modifications	112.34	112.34	~~537.37~~ **335.37**	~~26.05~~ **26.03**	~~613.67~~ **613.49**	~~634.96~~ **501.5**	~~0.34~~ **0.32**	~~0.0008~~	~~0.003~~
PSD Significant Level	25	15	40	40	100	40	0.6	~~0.0004~~	~~0.1~~

The detailed emission calculations for the above are shown in pages 1 through 6 of the Appendix-A attached to this TSD.

(a) The net emissions increase because of this modification to an existing major stationary source is significant for PM/PM10, SO2, NOx, CO and Beryllium because these are greater than the PSD significant levels. Therefore, this modification is subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) for major modification.

(b) The PM and PM 10 emissions from the RHF are controlled using two baghouses with outlet grain loading of less than 0.0052 grains/dscf.

(c) The NOx emissions from the RHF are controlled using low-NOx burners and a selective non-catalytic reduction unit.

(d) The CO emissions from the RHF are controlled using an afterburner.

(e) The SO2 emissions from the RHF are controlled using lime injection and/or using EAF dust as feedstock supplement.

(f) The PM and PM10 emissions from the SAF are controlled using a baghouse with outlet grain loading not greater than 0.0032 grains/dscf.

IDEM, OAQ also corrected some errors in the Appendix B of the TSD. The revised Appendix B is attached to this document.

Therefore, the following changes are made to the draft permit 033-15955-00076(where language deleted is shown with strikeout and that added is shown in bold):

1. The condition A.2 of the permit is revised to remove the reference to the replacement of 20 burners as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This modification to a stationary source is approved to make the following changes to the existing emission units and pollution control devices:

(a) use of Electric Arc Furnace (EAF) baghouse dust as a supplemental feed material for the RHF.

(b) addition of a 100,000 dscfm air flow baghouse to control fugitive emissions from the Rotary Hearth Furnace (RHF) exhausting to the stack identified as 77.

(c) increasing the air flow rate by 100,000 dscfm for the Submerged Arc Furnace (SAF) existing baghouse.

~~(d) Replacing existing burners to fire up to 20 burners in the RHF to allow the use of coal in place of natural gas.~~

2. The box in Section D.1 of the permit is revised to remove the reference to the replacement of 20 burners as follows:

Facility Description [326 IAC 2-7-5(15)]
(a) use of Electric Arc Furnace (EAF) baghouse dust as a supplemental feed material for the RHF.

(b) addition of a 100,000 dscfm air flow baghouse to control fugitive emissions from the Rotary Hearth Furnace (RHF) exhausting to the stack identified as 77.

(c) increasing the air flow rate by 100,000 dscfm for the Submerged Arc Furnace (SAF) existing baghouse.

~~(d) Replacing existing burners to fire up to 20 burners in the RHF to allow the use of coal in place of natural gas.~~

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

3. As IDEM, OAQ has received comments during the public comment period for this permit, the condition B.2 is changed as follows to clarify the date of effectiveness of this permit:

B.2 Effective Date of the Permit [IC13-15-5-3]

~~Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, this permit becomes effective upon its issuance, if no comments are received during the comment period for this permit.~~

~~-or-~~

Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, the effective date of this permit will be thirty (30) days after the service of notice of the decision, ~~if~~ **as** comments ~~are~~ **were** received during the public comment period for this permit. Three (3) days shall be added to the thirty (30) day period if service of notice is by mail.

4. The condition D.1.3 of the permit is revised to remove the reference to the coal burning or combination of coal and natural gas burning as follows. The language to minimize the ammonia slip is also added in this change:

D.1.3 Nitrogen Oxides (NOx) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the nitrogen oxide(s) emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by the use of low-NOx natural gas-fired burners and a selective non-catalytic reduction unit. Except during periods of startup or shutdown, ~~I~~**t**he total emissions shall not exceed~~:~~

~~a)~~ 1.25 pounds per ton of material charged into the furnace and 120 pounds per hour~~, when firing natural gas only;~~**.**

~~b) 1.56 pounds per ton of material charged into the furnace and 150.3 pounds per hour, when firing with coal only or a combination of coal and natural gas.~~

The SNCR system shall be operated in a manner recommended by the manufacturer and good work practices to minimize the NOx emissions and ammonia slip.

The condition D.1.3 in this permit supersedes the Operating Condition 24 in the CP 033-8091-00043, and condition D.1.3 in the MSM 033-13911-00076.

5. The condition D.1.4 of the permit is changed as follows to make minor language changes.

D.1.4 Carbon Monoxide (CO) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, except during periods of startup or shutdown, the carbon monoxide emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by afterburner and operated at a temperature exceeding two thousand six hundred (2,600) ^{o}F and emissions shall not exceed 100 ppm~~,~~ **and** 114,519 ug/m3. The total emissions per hour shall not exceed 146.8 pounds.

The condition D.1.4 in this permit supersedes the Operating Condition 25 in the CP 033-8091-00043, and condition D.1.4 in the MSM 033-13911-00076.

6. In an email and phone conversation on December 4, 2002, the Permittee contended that the control efficiency of 90% for SO2 emissions using EAF dust is based on theoretical calculations and assumptions about the operation of the RHF. The actual control efficiency may vary. Due to this uncertainty in the SO2 control efficiency, the Permittee requested that a caveat should be added to the condition D.1.6, to allow a modification to the condition D.1.6, in the event that the observed control efficiency in the stack test is different from the theoretical efficiency. The condition D.1.6 of the permit is revised to reflect the use of natural gas as the only fuel and other changes as follows:

D.1.6 Sulfur Dioxide (SO2) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the sulfur dioxide emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by lime injection, wet scrubber and/or use of EAF dust as supplemental feedstock. The SO2 emissions shall be limited as follows:

(a) When using lime injection or wet scrubber as control, **SO2 emissions** shall not exceed **0.75** ~~1.2~~ pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed **78** ~~124.12~~ pounds per hour.

(b) When using at least 2 tons per hour of EAF dust as supplemental feedstock as control, **SO2 emissions** shall not exceed **0.4** ~~0.97~~ pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed **39.0** ~~101~~ pounds per hour. **If the stack test required under Condition D.1.16 shows that this limitation is not achievable in practice, the Permittee can request the Department to re-evaluate the condition D.1.6 (b) to adjust this limitation to reflect the control efficiency observed in the test. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit modification.**

The condition D.1.6 in this permit supersedes the Operating Condition 27 in the CP 033-8091-00043, and condition D.1.6 in the MSM 033-13911-00076.

7. The condition D.1.7 of the permit is revised to reflect the use of natural gas as the only fuel and the use of EAF dust as supplemental feedstock as follows. Also the operation condition referred in this condition was incorrect. The correct condition is shown as follows:

D.1.7 Lead Emissions - Best Available Control Technology [326 IAC 2-2-3]

(a) Pursuant to CP-033-8091-00043, issued on June 25, 1997, lead emissions from the rotary hearth furnace process baghouse (Stack 40) shall not exceed **0.00058** ~~0.000625~~ pounds per ton of material charged into the furnace and **0.0557** ~~0.06~~ pounds per hour. The condition D.1.7 in this permit supersedes the Operating Condition **28** ~~24~~ in the CP 033-8091-00043, and condition D.1.7 in the MSM 033-13911-00076.

(b) The lead emissions from the rotary hearth furnace associated discharge chute baghouse (Stack 77) shall not exceed 0.019 pounds per hour.

The above limitation is based on the information related to the lead emissions from the RHF exhaust, presented by the Permittee in the application as part of Maumee Memo[1].

8. The Permittee withdrew the proposal to combust coal in up to 20 burners in RHF. The Beryllium emissions documented in this modification were caused by this coal usage. Therefore, the condition D.1.8 of the permit related limitation on the Beryllium emissions is completely deleted from the permit. This condition is replaced by a new condition to require the Permittee to operate the RHF using good operation practices.

~~D.1.8 Beryllium Emissions - Best Available Control Technology [326 IAC 2-2-3]~~

~~Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) the Beryllium emissions from the rotary hearth furnace process baghouse (Stack 40) shall not exceed 0.000021 pounds per ton of coal used. If the stack test required under Condition D.1.16 shows that the Beryllium emissions limit are not achievable in practice for the rotary hearth furnace, the Department may revise the permit to adjust this Beryllium emissions limit. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.~~

D.1.8 Startup and Shutdown Emissions - Best Available Control Technology [326 IAC 2-2-3]

(a) Startup is defined as the duration from the first firing of burners in the RHF to the time when the RHF exhaust gas temperature is within the optimum ranges of the operation of control devices for NOx, CO and VOC emissions.

(b) Shutdown is defined as the duration from first curtailment of fuel input to the RHF burners with the intent of full shutdown to the final complete stop of fuel input and complete cessation of combustion in the RHF.

(c) The RHF shall be operated in a manner consistent with good air pollution control and work practices to minimize emissions during startup, and shutdown by operating in accordance with written procedures developed and maintained by the Permittee, which shall include at a minimum the following measures:

1. Review of operating parameters of the unit during startup, or shutdown as

[1] See memo "Predicted Emission, MR&E Project No. 01054", from Deane Horne of Maumee Research and Engineering, Inc., as enclosed in the application packet submitted on May 02, 2002, to IDEM for the modification 033-15955-00076, March 1, 2002.

necessary to make adjustments to reduce or eliminate excess emissions;

2. Operate emission control equipment as soon as the RHF exhaust gas temperature reaches the lower value of the optimum temperature range for the control equipment. This operation shall continue until the time the RHF shutdown sequence is initiated with the intention of shutdown of the unit; and

3. Implementation of inspection and repair procedures for the RHF and the emissions control equipment prior to attempting startup to ensure proper operation.

9. The condition D.1.22 of the permit is changed to add the record keeping requirements for baghouse leak detection system.

D.1.22 Record Keeping Requirements

(a) To document compliance with Condition D.1.17, and D.1.18 (2) (if applicable) the Permittee shall maintain records as required under 326 IAC 3-5-6 at the source in a manner such that they may be inspected by IDEM, OAQ or U.S. EPA, if requested.

(b) To document compliance with Condition D.1.18 (1), (if applicable) the Permittee shall maintain records of opacity readings of the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks exhaust once per shift for a period of three (3) years. These records shall be made available to the IDEM, OAQ staff upon request for their review.

(c) To document compliance with Condition D.1.19 (if applicable), the Permittee shall maintain the per shift records of the differential static pressure during normal operation.

(d) To document compliance with Condition D.1.20 (if applicable), the Permittee shall maintain records of the results of the inspections.

(e) To document compliance with condition D.1.18 (3) (if applicable), the Permittee shall maintain records of the dates and times of all bag leak detection system alarms, the cause of each alarm, and an explanation of all corrective actions taken **and records of preventive maintenance required by D.1.18 (3) (g) and (h).**

(f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

Comments by Charles G Kille

Written comments were received from Mr. Charles G Kille of Citizen Organized Watch, Inc. of Columbia City, Indiana, on November 04, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

General overview by the Commentator:

The subject permit modification is being proposed under the provisions of the Prevention of Significant Deterioration (PSD) Program (40 CFR 52.21 and 326 IAC 2-2). The regulated pollutants above the PSD significant level include PM/PM10, SO2, NOx, CO and Beryllium, as per the notice of 30-day public comment published IDEM AOQ, dated October 2, 2002.

By navigating from the link provided (www.IN.gov/idem/oam/index.html) in the notice that I

received by USPS to the "Air Permits Online" page, and selecting "Public Notice" under the "PAST 30 DAYS", I obtained detailed information about this permit modification, including a link for an electronic version of the permit and the dates for the public comment period. The online version of this permit document is the version from which I have worked for the purposes of my review. The dates published and verified most recently by me in the "Friday, November 1, 2002", version of the "Public Noticed Last 30 Days - Sorted by Source" (this quoted items are in the header of the file - download filename: public_notice_30.pdf) indicate the following valid dates for activities associated with this permit modification are:

Public Notice Mailed: 10/2/2002 Begins: 10/7/2002 Ends: 11/6/2002

It is my intention to deliver this document in two forms. I will deliver an electronic Microsoft Word version via e-mail followed by a hard copy sent via USPS to the addresses indicated in the notice.

Please assume that all of the references cited within this document are included by reference.

Comment 1:

There exists some minor confusion regarding the type of permit this modification represents as it indicates both "Part 70" the operating permits code, and "Prevention of Significant Deterioration" which is part of New Source Review (NSR). My understanding after discussing this issue with IDEM is that Indiana's NSR/PSD is still operated under the Delegation of Authority (DoA) from the US EPA, Region 5, but that the State of Indiana has combined the programs in an effort to improve it's air permitting activities.

Please include in the record, or provide a reference within the record of this permit, an explanation of the actual line of authority under which this permit is being developed and promulgated. Please include as well, complete instructions for administrative appeal options that the public has when the final version of this modification is published.

Response 1:

On December 25, 1998 the IDEM, OAQ streamlined permitting process became effective. This rulemaking was intended to identify and eliminate state permitting requirements where an analogous review was required under new source review and operating permit programs. A modification to a Part 70 source that is subject to 326 IAC 2-2 requires a significant source modification, under 326 IAC 2-7-10.5 (f)(2). The PSD review and source modification review is done under one streamlined permitting action and issued under the authority of 326 IAC 2-7-10.5, 326 IAC 2-2 and 40 CFR 52.21. The requirements of both programs are satisfied.

In addition, the agency used the rulemaking to identify and eliminate state permitting requirements where no discernible environmental benefit was derived from the permitting process. The streamlined permitting process combines the NSR and operating approval into one permitting action. Since the Part 70 operating permit has not yet been issued, the source modification will authorize construction and operation of the new emission units and will be incorporated into the final Part 70 permit pursuant to 326 IAC 2-7-10.5(l).

The IDEM, OAQ also created a protocol for incorporating federally-approved permits in Title V operating permits that was submitted with the Part 70 program approval. It has been approved by the U.S. EPA and is attached for your convenience. The instruction for filing an appeal with regard to this approval, issued by IDEM, OAQ, are attached as a cover sheet to the final version of this permit.

Comment 2:

The first of two primary issues of significant concern within this proposed permit modification is the

matter of substituting very dirty fuel for clean fuel in an existing major source. Specifically, modifying the source to allow the use of coal in place of natural gas (NG).

Currently, in the existing source to be modified, NG provides the process heat that promotes and sustains the chemical processes required to produce the main product of iron. The existing process uses a small (compared to the proposal in this modification to use coal as process heat) amount of coal as a low cost source of carbon, a needed reduction reagent. The use of coal as a reduction reagent and not a source of process heat was established in the original IDI NSR/PSD, 25 June 1997, 033-8091-00076. The use of coal as a reduction reagent is not the subject of concern at this time.

The issue for this permit modification is that of much larger amounts of coal that are to be used as a source of process heat and the errant omission of clean fuel considerations within the BACT analysis.

As acknowledged on page 9 of 17, of the Technical Support Document (TSD), "...Therefore, the PSD provisions require that this modification be reviewed to ensure compliance with the National Ambient Air Quality Standard (NAAQS), the applicable PSD air quality increments, **and the requirements to apply the Best Available Control Technology (BACT)** for the affected pollutants." (emphasis added)

For the record, "The term 'best available control technology' means an emission limitation based on the maximum degree of **reduction of each pollutant subject to regulation** under this chapter emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, **clean fuels**, or treatment or innovative fuel combustion techniques for control of each such pollutant...." (42 USC 7479(3), emphasis added)

The TSD outlines the approach for a BACT analysis near the bottom of page 10 of 17 as follows:

- Identify all control technologies
- Eliminate technically infeasible options
- Rank remaining control technologies by control effectiveness
- Evaluate most effective controls and document results
- Select BACT

The BACT analysis contained within the TSD is not complete and fatally flawed due to its total lack of consideration for the use of "clean fuels" for the "reduction of each pollutant subject to regulation." IDEM has turned a blind eye to the very most obvious component of a proper and complete BACT analysis in the case of this proposed permit modification -- the use of clean fuel for IDI. It is not appropriate to assume that the proposed use of coal will meet BACT requirements. In addition, the step of ranking the technically feasible technologies places the consideration of the cleanest alternative ahead of those less effective.

For IDEM to assume the use of coal as an unquestioned basis for a permit modification, thereby omitting fuel considerations within the BACT analysis, is virtually equivalent to proceeding with the drafting of a permit modification for the removal of post process pollution control equipment, and simply accepting the pollution and health consequences.

Consideration of clean fuels is no less a part of the BACT analysis process than any other option for the reduction of each pollutant subject to regulation.

In the case of this permit modification, coal is the major source of the overwhelming majority of the additional criteria pollutants that are of concern within this permit modification, and it is the use

of coal that is the most simplistic an obvious consideration for the "reduction of each pollutant subject to regulation" for the BACT analysis, yet it has been omitted from consideration. Why?

A complete and proper BACT analysis for this permit modification to include the use of coal as a process heat source must logically consider and conclude that the current use of the cleaner fuel, natural gas, is technically or cost effectively infeasible. Put another way, the cleaner fuel must be procedurally and properly eliminated from consideration as a part of the BACT analysis.

The question of technical infeasibility for natural gas based on the established process already in place is most obviously off the table at this point. A determination of the cost infeasibility of natural gas has not been made. Such an analysis would of course have to be carried out in accordance with the sort of rigor already established in such guidance documents as the New Source Review Workshop Manual, Draft, October 1990. The summary results of such a cost analysis would of necessity be expected to be represented as a cost per unit ton of pollutant removed, and in this case, that cost would be stretched very thinly across the entire additional tonnage of pollutants avoided by avoiding the use of coal.

This is a very serious situation that calls into question the very premise and basis of this entire proposed permit modification. The only acceptable remedy must be for a complete BACT analysis to be conducted and included within an updated draft permit modification. Only then can the public be afforded a proper opportunity to review a complete permit modification package within its proper context.

The elimination of coal as a source of process heat would very likely eliminate the need for this modification to be classified as significant. Even under such a circumstance, it is requested that relevant information related to such a significant alteration to the established record of this permit modification be made public and a subject for review.

At this point, and due primarily to the incomplete BACT analysis, the establishment of coal as a fuel source for process heat has not been effectively established within the required permitting framework that includes BACT. This fact casts doubt upon the completeness and indeed the relevance of the balance of this permit modification document as it assumes the soundness of the choice of coal and attempts to deal with the aftermath of the pollutants produced. As evidenced by the applicant's planning for a significant investment in equipment to deal with this new fuel source. It is therefore considered very difficult to perform a relevant review of this permit given this current context.

Furthermore, the responsibility for requiring a complete BACT analysis for all significant permits and permit modification, or for providing the missing components for this BACT analysis and permit modification, does not fall to the public to produce as part of the public's task during the public comment period. The responsibility for the completeness of both the application for any permit or permit modification, and/or the subsequent drafting of a permit or permit modification is clearly that of the IDEM as the permitting authority, and/or the permit applicant. The technical and administrative process of preparing this permit modification stands seriously incomplete.

Please complete a proper BACT analysis and make whatever other proper resulting adjustments that are required for the permit and resubmit the resulting permit modification for public comment.

Response 2:

As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Therefore, these comments by the commentator are no longer relevant to this permit and do not require responses.

Comment 3:

The second of two primary issues of significant concern within this proposed permit modification is the matter of the "use of Electric Arc Furnace (EAF) baghouse dust as a supplemental feed material for the RHF." (A.2, page 4 of 26)

This material is considered to be a hazardous waste material. It is classified under 40 CFR 261.32 as "K061."

Please modify permit condition A.2(a) to indicate that the EAF baghouse dust that is to be used must meet the specification found at 40 CFR 261.32 K061 (confirm for the record that it is in fact a hazardous waste product).

Please state the source and authority that classifies a RHF as a proper method for disposition of this hazardous waste material.

Response 3:

The IDEM, OAQ will like to clarify the extent of classification of wastes as hazardous under the provisions 40 CFR 261.

Wastes can be classified as 'hazardous' if they are either listed under 40 CFR 261.32 or based on character described under 40 CFR 261 subpart C. The material does not become a waste unless it is disposed of. The K 061 is a classification number identified by EPA[1] as "Industry and EPA hazardous waste no." in the table in 40 CFR 261.32 for the 'Emission control dust/ sludge from the primary production of steel in electric furnaces'.

The IDEM, OAQ disagrees with the commentator and does not intend to make this change because:

1. The first paragraph in Section A of the permit states "The information… in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions". Characterizing the material as a hazardous waste is not relevant to the air permitting program.

2. Also the K061 'labeling' is based on material which will be not be utilized in the process and will be disposed as waste.

3. A letter dated June 13, 2002, from the IDEM, Office of Land Quality stated that "your [SDI-IDI's] primary business is the production of iron and steel, the EAF [baghouse dust] is generated from this process, you are proposing to reintroduce it to this process without prior reclamation for production of iron. …..when the EAF dust is used as described in your letter it is not regulated under the hazardous waste rules. EAF dust which is spilled or released and not reused would be regulated as a listed hazardous waste."

Therefore no changes are made to condition A.2 because it is only descriptive information and the commentator's request is not based on any legal requirement or authority.

To establish as part of the record, the baghouse dust from the EAF's at SDI at present is disposed of as Hazardous Waste under the rules mentioned earlier. Reused EAF dust never becomes a waste and thus is not classified as hazardous.

[1] See 40 CFR 261.32 "Hazardous wastes from specific sources", USEPA, available at http://www.epa.gov/docs/epacfr40/chapt-I.info/subch-I.htm.

Comment 4:

The baghouse dust in question is assumed to be a byproduct of the SDI EAF based steel making process that produces new steel mainly by recycling used steel and iron products. The actual content of the baghouse dust produced as captured in the SDI EAF baghouse varies based on the feed materials used in the SDI process. It includes both reasonably predictable portions of know non-hazardous elements (iron and zinc oxides) and variable amounts of compounds that are not predictable and are themselves considered hazardous (heavy metals, lead oxides, and so on). It is these unpredictable elements and their unknown concentrations that are of concern.

Is there an economical method for separating the hazardous from the non-hazardous components found in EAF baghouse dust (K061)?

Response 4:

The SDI EAF uses scrap as raw material to make steel coils. The scrap for the EAF is subject to a stringent scrap management plan to minimize the constituents causing harmful emissions in the melting process. This ensures that the scrap being used is of fairly consistent quality.

The Permittee has submitted the information shown in column B with respect to the HAP constituents of the EAF baghouse dust. Based on an annual rate of 80,000 tons of EAF baghouse dust that can be used in the RHF as supplemental feedstock, the potential annual emissions assuming all the HAPs are volatilized are shown in column C. The column D shows the boiling points in the Fahrenheit for the various HAP constituents. The column E contains the predicted actual HAP emissions. These emission are based on the RHF operating temperature of 2600^{o} F and assuming that all HAPs with the boiling point greater than this will not be volatilized. The emission rate takes into account the 99.85% control efficiency for the baghouse on the RHF.

Column	**B**	**C**	**D**	**E**
HAP	**% HAP in EAF Dust**	**Yearly Emissions (based on 80,000 tons of EAF Dust) (assuming conservatively 100% volatilization of HAPs) (tons/year)**	**Boiling Point of HAP (F)**	**Predicted actual HAP emissions (tons/year)**
Antimony	0.0035	0.0042	3,182	0
Arsenic	0.0015	0.0018	1,135	<0.0018
Beryllium	0.000062	0.0000744	5,378	0
Cadmium	0.009	0.0108	1,409	<0.0108
Chromium	0.1386	0.16632	4,842	0
Cobalt	0.0258	0.03096	4,653	0
Lead	0.2974	0.35688	3,164	0
Manganese	2.2208	2.66496	3,564	0
Mercury	0.000046	0.0000552	674	<0.0000552
Nickel	0.0222	0.02664	4,950	0
Phosphorus	0.0817	0.09804	536	<0.09804
Selenium	0.0036	0.00432	1,265	<0.00432
TOTAL		**3.3650496**		**<0.1150152**

The information in table was compiled based on multiple samples of EAF baghouse dust taken at SDI plant in the past and combining this information to establish the worst case constituents.

Based on above information the total HAP content of the EAF dust is less than 3%. The very small amount of material recovery (in the form of heavy metals) will create a huge financial burden on

the SDI – IDI in an effort to handle the large amount of EAF baghouse dust, other than to recycle and reuse it as feedstock in the RHF. In discussion with the Permittee it transpired that it would be cheaper to landfill the EAF dust material than to try to separate out the hazardous components. The SDI – IDI contacted hazardous waste processors to reclaim material from the EAF baghouse dust. Due to low concentration of the reclaimable components the same is infeasible. Further removal of the reclaimable components would not change the regulatory status of the EAF baghouse dust, which would still have to be disposed of as a hazardous waste. Therefore, this strategy will hinder the recycle, pollution prevention and environmentally sound approach adopted by the SDI – IDI to reuse the EAF dust as feedstock and minimize the landfill requirements.

Comment 5:

The hazardous waste baghouse dust is a byproduct with an unpredictable level of hazardous content. It is not a predictable or a refined product in the state in which it is collected from the baghouse, and it seems unwise to assume that the undesirable hazardous materials it may contain will be trapped in their entirety when given a second run a the post process mechanical filter provided by the proposed IDI baghouse.

Process feed materials are regularly required in permit conditions to meet specific quality standards yet there are no standards applied to the dust which may or may not contain significant quantities of hazardous air pollutants. How can this permit provide for public health without any sort of controls on this feed material for amounts or concentrations?

What assurances are in place to keep the applicant from continuously reintroducing baghouse dust from the EAF and RHF baghouses into the IDI as feed material?

Are there requirements for record keeping and analysis of the volume and content of materials removed from the baghouses? We are discussing hazardous waste.

The undesirable elements from the baghouse dust feed into the IDI process will either end up in the IDI slag, be caught in the baghouse (again, and maybe), or pass through the baghouse in the gas phase, as fugitive, and/or condensable fugitive emissions. This seems a dangerous president to set.

Response 5:

The percent hazardous constituents of the baghouse dust as a worst case scenario are shown in the earlier table. This table shows small amount of HAP emissions from the use of EAF baghouse dust at the RHF. To further establish the minor status of this modification for the HAP emissions, the IDEM, OAQ has revised the condition D.1.16 of the permit as follows:

D.1.16 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) Within 60 days of achieving maximum production rate, but no later than 18 months after issuance of the operation permit validation letter, for the rotary hearth furnace process baghouse (Stack 40) and the submerged arc furnace (Stack 58), in order to demonstrate compliance with conditions D.1.1 **(a)** through D.1.4, D.1.6, ~~D.1.8~~ and D.1.9 the Permittee shall perform PM, PM10, NOx, CO **and** SO2 ~~and Beryllium~~ testing on the RHF process baghouse (Stack 40) and PM/PM10 testing on the SAF (Stack 58) utilizing methods as approved by the Commissioner. The PM-10 includes both filterable and condensable components.

(b) During the timeframe mentioned in the item (a) of this condition, the Permittee shall perform PM/PM10 testing for the RHF associated discharge chute baghouse (Stack 77) in order to demonstrate compliance with condition D.1.1 (b), utilizing methods as approved by the Commissioner. The PM-10 includes both filterable and condensable components.

(c) During the timeframe mentioned in the item (a) of this condition, the Permittee shall analyze the EAF baghouse dust for the hazardous components. The Permittee shall calculate the hourly HAP emissions assuming 100% vaporization of the hazardous components identified previously for the rotary hearth furnace process baghouse (Stack 40), using the highest throughput rate in tons per hour of EAF baghouse dust achieved during this period. This mass balance computation shall be converted to annual emissions, assuming 8760 hours of operation in a year, and used to establish that the single HAP emissions are less than 10 tons per year, and the combination of HAPs emissions are less than 25 tons per year pursuant to 326 IAC 2-4.1-1. In the event that the HAP emission exceed the threshold stated earlier, the Permittee shall inform the IDEM, OAQ about the same, and curtail the operation of the RHF in a manner, not to exceed the thresholds specified in this condition.

All ~~T~~testing **(except testing of EAF baghouse dust which shall be tested in accordance with SW-846 or other approved methods)** shall be conducted in accordance with Section C-Performance Testing. This condition supersedes Operation Condition 7 in the Permit 033-8091-00043 with respect to the rotary hearth furnace part only.

The IDEM, OAQ does not have authority beyond what is provided in the regulation to restrict the use of any material, unless it triggers new applicable requirements which otherwise the Permittee would like to avoid. In that case the IDEM, OAQ can restrict the use of raw material components such as to restrict the emissions below the applicability threshold for the regulation. The item (c) added to the above condition covers this aspect, where, in the event the potential to emit for HAPs exceed the threshold for 326 IAC 2-4.1-1, the Permittee is required to curtail operation of the RHF to restrict emissions below the applicability threshold.

No requirements other than those already in place in this and other permits for this Source restrict the Permittee to reintroduce the baghouse dust in the RHF as feedstock continuously. During the operation of RHF, as long as the Permittee is able to demonstrate compliance with the applicable regulations and limitation, the Permittee is not restricted on the ratio of recycle of EAF baghouse dust as feedstock to the RHF versus the other raw materials. The purpose of this project is to allow the Permittee to recover material from the EAF baghouse dust and minimize the landfill requirements. These objectives have to be achieved all the while complying with the applicable regulation and limitations.

As shown in response to earlier comments and the TSD for this permit, the IDEM, OAQ has at this time no reason to believe that the SDI – IDI project to introduce EAF baghouse dust in the RHF will cause increases greater than the threshold under 326 IAC 2-4.1-1 for the single HAP and a combination of HAPs emissions. During the implementation stage of this project and the actual testing of the emissions, if the observations indicate that actual HAP emissions are higher than stated in the application, permit and exceed the threshold under 326 IAC 2-4.1-1, the IDEM, OAQ will take necessary action to rectify the situation.

In the event that after the implementation of this project, the RHF baghouse dust contains constituent hazardous materials (contaminants) in excess of the levels specified in 40 CFR 261.24, Toxicity characteristic, the same could be classified as hazardous and will be treated accordingly under the regulations. The Source has obligations under the hazardous waste program to deal with such situation. Also as shown in response to earlier comment, the likelihood of creation of condensable fugitive HAPs is minimal because the operating temperature in the RHF is lower than the boiling point for the hazardous contaminants in the EAF dust.

Comment 6:

Please provide an explanation of the complete cycle of the EAF baghouse dust to be used as feed material for the IDI RHF including the evolution and capture rates the hazardous components.

Response 6:

The information available up to this point has been presented and discussed in detail in the TSD and this addendum to the TSD. The baghouse used at RHF has 99.85% control efficiency. Therefore, the baghouse will be able to control particulate HAP emissions with this control efficiency. The reduction method in the RHF is a unique process and limited information is available at this time to determine the process characteristics beyond what has already been provided.

Comment 7:

Please include information about how the source, content and volume of the dust used will be monitored and accounted for.

Please include enforceable permit conditions that will regulate the source, amounts and content of the dust used.

Please indicate whether IDI intends on becoming a certified hazardous waste disposal facility for EAF baghouse dust and include the parameters and regulations and enforceable requirements within the permit conditions, and make them available for public comment.

Please indicate whether IDI will be limited to recycling only the dust created on-site or whether IDI will receive shipments from other facilities external to the Butler mill site.

The implications of each of the answers to the above questions should be subject to public comment as they involve the possible transport and disposal of hazardous material that pose a health risk to the general public, as well as the possibility of their impact on the content of the permit modification.

If indeed the proposed use of this dust as a feed material turns out to be an improvement over the current disposition of the material whereby it is dumped in a hazardous waste land fill, it will be worth supporting until such time as a better alternative is proposed. Please show the public the supporting information.

Response 7:

In response to a comment earlier it has been explained that the use of EAF baghouse dust at RHF is not limited or regulated to any specific source, content or amounts. The economics of transporting and usage of this material is the only limiting factor. There are operational, technical and quality restrictions to the amount of EAF baghouse dust that can be used in the RHF. The maximum production rate of direct reduce iron from the RHF is 96 tons per hour. The amount of EAF baghouse dust cannot form a large part of each feed of material because it can affect the quality and quantity of direct reduced iron produced.

The regulations impose limitations on the amount of emissions that can be caused by the operation of RHF but do not require limitations on nature or quantity of EAF baghouse dust used as feedstock.

The IDEM, OAQ is not aware of any plans to handle waste or EAF baghouse dust from other Sources other than the sister facility at SDI Whitely County plant. The IDEM is aware that the SDI-IDI intends to bring EAF baghouse dust from the Whitely county plant (depending upon the success of this operation with dust from Butler plant) to be used as feedstock. The hazardous material is otherwise being transported regularly to the landfill sites. This project minimizes the need to transport and landfill this material.

Comment 8:

There are no enforceable permit conditions that specify the sulfur content of the coal. The assumptions that form the basis for analysis in the TSD and Appendix A are not sufficient. There must be an enforceable permit condition added to this permit that specifies the sulfur content of the coal that SDI may use, and this specification must be subject to public review as part of this permit modification.

Response 8:

The Permittee has withdrawn the request for the installation of 20 new coal burners to dual fuel burners in the RHF unit. Therefore, that part of the permit is removed in the final document. No changes are necessary to any permit condition.

Comment 9:

On page 11 of 17 of the TSD, near the top of the page under the heading of Rotary Hearth Furnace, Control of particulate Matter Emissions, is a description of the baghouse that includes the following:

"The Permittee proposes a baghouse with fiberglass bags to withstand the entering exhaust temperature of 350^{O}F."

The flue gas temperatures within the EAF baghouse used to capture the EAF Baghouse dust from the SDI mill is considerably lower than that planned for the IDI RHF. This is evidenced by the use of polyester bags, which would melt at the higher temperatures, planned for the IDI with its need for fiberglass bags.

These higher temperatures will in turn mean a higher percentage of pollutants will still be in a gas phase and they will simply pass through the fiberglass bags of the proposed baghouse. This means that a higher percentage of the hazardous pollutants from the coal, EAF baghouse dust, and all other feed materials will simply pass through the proposed IDI baghouse.

The proportion of condensable to filterable PM is not accounted for with respect to the efficiency and suitability of the chosen baghouse design proposed by the applicant. A whole class of hazardous air pollutants will simply pass through the proposed baghouse. This does not seem to have been considered while evaluating this permit modification.

BACT too should demand a closer look than accepting "baghouse" as the selection. Not all baghouses, baghouse configurations, or filter elements are the same, and this applicant has an established history of demonstrating their inability to build or operate their baghouses within the established permit limitations (see section 6, below).

42 USC 7412(b)(1) contains a listing of hazardous air pollutants that includes "Polycylic Organic Matter" which has a footnote (footnote 4) that indicates this matter:

"Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 degrees C"

In addition to these hazardous air pollutants, there are also a large number of other elements and compounds that will be gaseous or can remain so at temperatures below 350 degrees F. They will simply past through the baghouse uncontrolled.

The baghouse configuration proposed for this permit will do nothing to reduce these emissions and the increased temperatures will provide a means for hazardous waste that had been captured in the cooler EAF baghouse to escape the filter elements of the hotter IDI baghouse.

Please reconsider the configuration of the baghouse for IDI and methods of cooling and condensing the gases so that they may be controlled and captured.

The only references to condensable PM are in D.1.16, page 12 of 17 of the TSD, and page 1 of 5 of the TSD Appendix A.

D.1.16, Testing Requirements, includes the sentence, "The PM-10 includes both filterable and condensable components." This condition does not specify a testing method and references Section C conduct of the testing. Section C does not specify an approved test method either. Test methods should be specified and limits set.

Page 12 of the TSD only mentions "condensable" as a conditional portion of the effectiveness of control efficiency. It goes no further. It does not specify or indicate amounts or limitations on condensable PM of any kind. Somewhere in this permit there must be such a quantification and enforceable limitation on condensable PM.

Response 9:

As explained in the addendum to the TSD for the Part 70 Significant Source Modification and Major Modification Under PSD, for the Iron Dynamics, Inc., 033-12992-00076[1], under comment/response 11, IDEM, OAQ has stated that per the definition PM 10 (particulate matter less than 10 micron in diameter) consists of both filterable and condensable components. Therefore, unless specifically stated as 'PM-10 (filterable only), the IDEM, OAQ applies the limitations for PM10 to combined filterable and condensable components. To clarify this intent further condition D.1.1 is changed as follows:

D.1.1 Particulate Matter (PM**/PM-10**) - Best Available Control Technology [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the PM/PM10 **(where PM 10 includes both filterable and condensable components)** emissions from the rotary hearth furnace process baghouse shall not exceed an air flow rate design of 310,000 dscfm (353,000 acfm) and 0.0052 grains per dscf through stack 40. The total per hour emissions shall not exceed 13.4 pounds.

(b) Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements), the PM/PM10 **(where PM 10 includes both filterable and condensable components)** emissions from the rotary hearth furnace associated discharge chute baghouse shall not exceed an air flow rate design of 100,000 dscfm and 0.0052 grains per dscf through stack 77. The total per hour emissions shall not exceed 4.46 pounds.

As described earlier, the majority of metallic hazardous contaminants in the EAF baghouse dust have the volatilization point (boiling point) greater than the operating temperature of the RHF and far greater than the baghouse inlet temperature. Also the concentration of the hazardous contaminants is very low. Therefore, using baghouse as control with 99.85% control efficiency, there are minimal HAP emissions expected from the implementation of this project.

The commentator's perception that the higher temperature of exhaust gases means higher percentage of pollutant will be in gaseous phase and therefore will pass is not completely accurate. The exhaust gas temperature at IDI is expected to be close to 350^{o} F. As can be seen in the table shown in response to earlier comment, this temperature is nowhere close to boiling point of hazardous contaminants. Further the RHF is equipped with an afterburner which operates at a minimum temperature of 2600^{o} F. At this temperature the afterburner acts as a thermal oxidizer and destroys most of the VOC and CO emissions. In the event that any organic HAPs are

[1] See "Part 70 Significant Source Modification and Major Modification Under Prevention of Significant Deterioration - 033-12992-00076" issued by IDEM, OAQ to the Iron Dynamics, Inc. on May 16, 2002

present in the RHF exhaust (extremely unlikely because of very high operating temperature in the RHF), they will be destroyed in the afterburner chamber.

The condensable PM 10 emissions were taken into account when the PM 10 grain loading emission limits were set in condition D.1.1 above.

The BACT assessment for the RHF was carried out based on available information and research for similar emission units constructed at other sources and manufacturer specification for this equipment. The Permittee had selected the top option i.e. using the baghouse to control the PM and PM10 emissions. The commentator has presented no new information to suggest that the BACT level should be more stringent than already stated in the permit. The Permittee is required to test the exhaust gases from the RHF to demonstrate compliance with the applicable limits. No other changes are required to any permit conditions.

Comment 10:

The appendix A reference addresses only condensable sulfur from the perspective of an AP-42 estimate and does not address the substantially increased gas temperatures expected at the proposed baghouse.

There is no mention of condensable pollutants in this permit modification other than these referenced just above. Other condensable flue gas components, hazardous or otherwise, such lead, are not adequately considered in this permit modification. A specific test method, perhaps Method 12, should be designed to test for condensable particulates and should be specifically required unless there is a more rigorous approved method. This information should be contained in this permit for public review and comment.

The IDI baghouse plan is being substantially altered for this modification evolution and as part of this process, the applicant should be compelled to consider lowering the temperature of the gases before they reach the bag house to improve the capture rate of condensable criteria and hazardous pollutants.

Response 10:

The permit for the introduction of the EAF baghouse dust in the RHF is based on the available information which has some degree of reliability and applicability to this type of process from the generic boiler emission factors as specified in AP 42. This type of usage of emission factors from one type of process to other similar process is common practice in the event that more reliable information is not available.

The Permittee is required to test for both filterable and condensable PM10 and show compliance with the applicable limit. As explained in the addendum to the TSD to the permit 033-12992-00076 issued to this Source, IDEM, OAQ, as a policy does not specify the test method for various pollutants in the permit itself. The permit requirements focus on the pollutants to be tested and the applicable limits. The IDEM, OAQ does not specify the test methods because in the course of time more elaborate and accurate test methods might be developed. The department does not want to be restricted to using the old less accurate methods to test when a newer version is available. Therefore, recent applicable test method is specified every time a Permittee sends in a request for observing the stack test to the Compliance Data Section of the IDEM, OAQ. Further information in this regard can be obtained from the Compliance Data Section of the IDEM, OAQ.

The baghouse on the RHF at IDI is not being changed through this modification. The Permittee has requested the approval to add an additional baghouse to control PM/PM10 emissions from the RHF discharge chute for the direct reduced iron. The IDEM, OAQ is not aware of any technologies, which can cool and condense large airflow at high temperature as it is from the RHF to reduce emissions in an economically feasible fashion. Given the relatively low exhaust

temperature from the baghouse, there is no evidence that further lowering of this temperature will reduce emissions at all. Therefore no changes are made to any permit conditions.

Comment 11:

Page 5 of 17 of the TSD includes the declaration that, "There are no enforcement issues related to this modification."

I disagree with this declaration.

Under the Source Definition section of the TSD on page 1 of 17, IDEM confirms that, "Steel Dynamics, Inc. and Iron Dynamics, Inc. are under common control. These two plants are considered one source..."

At this time, and during the preparation of this permit modification, there exists a pending Notice of Violation and Finding of Violation, EPA-5-01-IN-13 that includes a listing of not fewer than 26 items under the heading of "Violations." No fewer than five of these items listed under Violations are the direct results of failed stack testing that produced results that significantly exceeded the conditions of their permit. These are issues that were overlooked by IDEM in the past even though several were referred to IDEM's enforcement.

Why does IDEM continue to turn a blind eye to obvious problems?

Why does IDEM accept at face value the assertions of the applicant regarding the effectiveness of their control systems such as their baghouse and their process and procedures for its proper operation and maintenance when there is clear evidence to the contrary?

Please provide answers and explanations and include a detailed and accurate accounting of SDI/IDI's performance and outstanding enforcement issues.

Response 11:

The TSD on the page 5 of 17 contains the statement under 'Enforcement Issue' stating that "There are no enforcement issues related to this modification". The IDEM, OAQ's intent for stating this in the TSD is to establish that the applicant has applied for the approval in accordance with the 326 IAC 2, the article pertaining to the permit rules requirements. This statement is in no way meant as a reflection of the historical compliance status of the Source or any other future or pending enforcement actions.

The intent of this section is to establish that whether the applicant followed the proper application procedure for the modification approval, or was the application submitted after the fact, that the construction and/or operation of the equipment had already started. In the second case the modification could be considered construction and/or operation without the proper permit and may constitute a violation of the applicable regulation.

The detailed information about the enforcement actions is available at the Office of Enforcement web site below:

http://www.in.gov/idem/enforcement/oe/about/index.html

The US EPA enforcement details in the Region 5 are available at the following web site:

http://www.epa.gov/region5/air/enforce/enforce.htm

No changes are made to any permit conditions.

Comment 12:

The calculated emission rate for lead (Pb) contained in TSD Appendix A on page 4 of 5 does not apparently consider the condensable or fugitive portions of lead. Please include a complete accounting of the potential lead emissions.

Response 12:

The PM10 emission rate of 19.5 tons per year is considered in the calculation of Lead emissions and does include both filterable and condensable components. Therefore, condensable Lead emissions are accounted for in the calculation on page 5 of 5 of TSD.

Comment 13:

Under D.1.18.3, it says, “Installation and operation of a bag leak detection system. If bag leak detections is installed, then...” Why would a permit condition indicate the optional installation of a critical control device such as a leak detection system? Would such a system’s installation and proper operation be a requirement or condition of the permit and facility modification?

The feasibility of a bag leak detection system has already been established during the permitting process associated with the SDI mill in Whitley County, Indiana.

Please reword this item to indicate that the bag leak detection system installation and operation is not optional.

Response 13:

The original construction permit 033-8091-00043 for the RHF requires the Permittee to perform opacity readings on a daily basis only. The IDEM, OAQ revised the requirement in this permit for the modification to require opacity readings to be taken once per shift, in accordance with the present IDEM, OAQ policy with respect to compliance monitoring for use of opacity as a surrogate parameter for PM/PM10 emitting emission units. The IDEM, OAQ believes that the opacity readings taken once per shift in accordance with Method 9 of 40 CFR 60 Appendix A are sufficient to demonstrate compliance. The Permittee voluntarily requested IDEM, OAQ to provide the opportunity to either install a continuous opacity monitoring (COM) system or the baghouse leak detection (BHLD) system in place of taking opacity readings by certified observer once the operation of the RHF is smooth and more or less continuous. There are no applicable regulations that may require the installation of these systems otherwise. The IDEM, OAQ concurred with the Permittee that the systems are more sophisticated and advanced techniques for measuring and monitoring opacity and therefore either one of them can be considered substitute for opacity readings by the observers. In the event that the BHLD system is installed the Permittee is also exempted from performing parametric monitoring by taking pressure drop readings and baghouse inspections. This is because the system provides reliable measure of performance of the baghouses on more or less continuous basis than the parametric monitoring and baghouse inspections can provide. This exemption from the parametric monitoring in condition D.1.18 in the case of use of COM is removed from the permit in the following pages.

Comment 14

Under D.1.21 Broken or Failed Bag Detection, Item (b) says, “Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).” The C.13 Emergency Provisions do not contain language that defines any limitations for the number of “emergencies” that may be declared that result from the same circumstances or issues. Request that IDEM include language that sets a proper expectation for the applicant and the public that limits the recurrence of like emergencies where proper preventive measures can be taken to avoid the issue in the future. A

recurring violation can only be the result of an emergency the first time it happens. After it's been corrected and proper measures are taken to avoid it in the future, that situation must be considered predictable and should no longer meet the criteria for an emergency.

Response 14:

The IDEM, OAQ will like to bring to the commentator's attention the definition of 'emergency' in Article 326 IAC 2-7-1 (12). It states "'Emergency' means any situation, including acts of God, arising from sudden and reasonably unforeseeable events beyond the reasonable control of the source, which:

(A) requires immediate corrective action to restore normal operation; and
(B) causes the source to exceed an emission limit under a Part 70 permit due to unavoidable increases in emissions attributable to the emergency.

An *emergency shall not include noncompliance* to the extent caused by improperly designed equipment, *failure to implement an adequate preventive maintenance plan*, careless or improper operation, or operator error." [emphasis added]

This definition explains that any failure to implement adequate preventive maintenance plan or improper operation shall not be classified as 'emergency'. Based on above definition it is impossible to specify a limitation on number of occurrences of 'acts of God' or 'sudden and reasonably unforeseeable events'. Therefore no changes are made to any permit conditions.

Comment 15:

For what reason has consideration of the PM2.5 standard been omitted from this permit? The standard is in full force. Please explain and correct this oversight.

Response 15:

The state implementation plan for the Particulate Matter (less than 2.5 micron in diameter), also know as 'fine particulate' is under development at this time. In addition very limited information about concentration, standards and modeling analysis is available at this time for the fine particulate. The minimization of SO2 and NOx emissions by using state of the art controls on the RHF can minimize the generation of PM2.5 emissions.

Comment 16:

What reason can be given for the limits of condition D.1.1(b) to be as lax as permits granted many years ago? This permit modification proposes new equipment. The state of the art is capable of increased efficiency's. A proper BACT analysis would opt for cleaner levels and better or "Best of Breed" equipment and limits. The current BACT analysis does not include the options passed over as infeasible and is therefore incomplete. Please include a complete BACT analysis that does not "assume" the outcome of the analysis.

Response 16:

Most of the similar facilities do not employ any controls for fugitive emissions. SDI-IDI has proposed and IDEM, OAQ has required the installation of the discharge chute baghouse as part of the BACT review. The IDEM, OAQ had evaluated other similar applications of baghouses and did not find any instances of similar facilities using any more stringent limitations than the RHF at IDI. In the absence of alternative technological choices, the Permittee's proposal to install baghouse to control fugitive emissions from the discharge chute area was selected as top alternative. The grain loading limit assigned to this baghouse was kept similar to the limitation on the baghouse on the main stack for the RHF. This was done in the light of recommendation of the baghouse

manufacturer for this operation. No changes are made to any permit conditions.

Further written comments were received from Mr. Charles G Kille of Citizen Organized Watch, Inc. of Columbia City, Indiana, on November 06, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

Comment 17:

I just ran across a section of the FR from July 2002 that deals with EAF Baghouse Dust (K061). I've attached it below (filename: 67fr48393_24july2002_k061.pdf). Please allow me to amplify/augment/add to my earlier comments for the draft permit document package 033-15955-00076 for Iron Dynamics, Inc. in DeKalb County, Indiana that I delivered this week by e-mail and USPS by adding the content of this e-mail and attachment to the record.

The EAF dust that is to be used as a feed material for IDI seems to have been reaffirmed as a Hazardous Material with qualities that include unpredictability in it's concentrations of hazardous components. It is captured as an air born particle in a baghouse, and SDI/IDI now wants to feed it into the IDI RHF.

What is the classification of the dust collected from the RHF baghouse? What is the Resource Conservation and Recovery Act status of IDI's present "emission control dust/sludge?" It would seem to be gaining a set of components derived from the K061 feed material if this permit allows the EAF dust as a feed material. How does it do on the toxicity characteristic leaching procedure referenced in 40 CFR 261.24?

Does passing the EAF K061 hazardous material through the RHF "transform" the hazardous material into something that is not classified as hazardous? If so, where do the hazardous components go?

If there's enough hazardous material in the dust in the first place to classify it as hazardous, and it's been captured in the dust, why would we feel good about allowing it to be indiscriminately distributed by being feed through the IDI Process? Are we going to have "solution by dilution?" I don't believe that it just vanishes. These hazardous components are metals and compounds. Will portions of it escape as gas through the hotter RHF baghouse planned by SDI/IDI? Will portions of it escape as a now more refined and smaller particle than the baghouse is designed to capture? It's the very smallest particles that are the most serous risk to health.

Will the IDI process simply refine and concentrate the hazardous components of the EAF dust?

The IDI process is a new process. It's even billed as a novel process. Before we dump hazardous material in the front end of this system, please let us ensure that we understand the cycle of those hazardous materials as they evolve through that system before full approval. Please let us also plan to monitor and test to be sure we are not introducing additional health risks.

How was the unpredictability of the EAF dust accounted for in the Hazardous Air Pollutant analysis? As a fall back, is there a way to make the issue of feeding the dust conditional rather than simply approved with the permit?

There is going to be a significant economic driver for the whole steel industry based on the data in the attached FR. See page 48409 for a table of estimated incremental costs and cost savings by facility category. It seems to show that not allowing K061 to be used to make fertilizers will cost the steel industry while saving others. I'm assuming an increase due to disposal costs. SDI and others will need to find something to do with the dust and there are already some significant land fill issues. We need to be sure we are not simply trading one problem for another, namely our health for SDI/IDI cost savings.

Response 17:

The RHF baghouse dust does not belong to the categories listed under 40 CFR 261.30 as 'list of hazardous wastes', and previous testing indicates that the RHF baghouse dust was not characteristically hazardous because the RHF baghouse dust did not exceed the concentration thresholds specified in 40 CFR 261.24. At this time it is not known what effect would the addition of EAF baghouse dust to the RHF would have on the hazardous or otherwise nature of the RHF baghouse dust. In either case this baghoouse dust may be subject to the regulations for hazardous waste if the dust contains concentration of any contaminants specified under part 261.24 in excess of levels specified thereunder and is disposed of.

The quality and type of the material collected in the baghouse is not relevant to the status of the RHF from the air regulation perspective. The separate set of regulations governing solid and hazardous wastes may be applicable to this material depending on its quality and contaminants.

The IDEM, OAQ has revised the stack testing condition as described earlier to validate the minor status of this modification for the single HAP and combination of HAPs emissions. Therefore, if any dust escapes the baghouse it will be captured during the test and will influence the applicability of regulations governing HAP emissions to this modification.

It is possible that the use of EAF baghouse dust at RHF may cause a concentration of hazardous components in the RHF dust. The IDEM, OAQ has limited ability to influence the project design proposed by the applicant. The main authority of IDEM, OAQ lies in the regulations governing the emissions of air pollutants. Therefore, as long as the SDI-IDI reuse of EAF baghouse dust project complies with all applicable regulations, the IDEM, OAQ has limited ability to influence the project design.

Therefore no changes are made to any permit conditions.

Comments by Stephen A. Loeschner

Written comments were received from Mr. Stephen A. Loeschner of Fort Wayne, Indiana, on November 03, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

General Comments

This is comment on a draft 40 CFR 70 style permit modification (where there is no 40 CFR 70 permit) for Iron Dynamics, Inc. in DeKalb County, Indiana ("IDI") described in Indiana Department of Environmental Management ("DEM") draft permit document package 033- 15955- 00076 ("15955") for a 40 CFR 52.21(b)(2) (All CFR cites herein are 1 July 2002.) Prevention of Significant Deterioration ("PSD" 42 USC 7470 *et seq.*, 40 CFR 52.21) significant source modification to a direct iron reduction operation.

The principal permit matter is authority for removal of devices ("gas burners") that combust a high hydrogen hydrocarbon fuel gas (mostly methane) with ambient atmospheric oxygen for the purpose of producing (adding) process heat and the replacement construction thereof with devices ("coal burners") that combust coal with ambient atmospheric oxygen for the purpose of adding heat.

A second permit matter is authority to utilize 40 CFR 261.32 "K061" hazardous waste as an iron-bearing "feed material" and or as a pollution control reagent ("PCR") wherein the specific K061 may be a selected material having a higher zinc oxide ("ZnO") content than average K061. The goals are apparently to have the ZnO react with sulfur dioxide ("SO2") and ambient atmospheric

oxygen to produce zinc sulfate, ZnSO4, which is to then form particles of a size such that they may be removed by mechanical filtration pollution control equipment ("PCE").

Comment 1:

Definitions
15955 Condition A.2(a) should be amended to read: "... dust compliant with 40 CFR 261.32 K061 ...".

Response 1:

See response 3 in the previous pages for comments made by Charles K.

Comment 2:

15955 Condition D.1.4 should be amended by striking: "ppm, 114,519 ug/m3" and adding: "ppmv on an hourly rolling average basis (i.e., over any 60 minute period), continuously corrected to 7% oxygen, dry gas basis (40 CFR 266.104(b))."

Response 2:

There is no change in the limitations and quantification of CO emissions. The IDEM, OAQ believes that the condition as stated clearly specifies the CO emissions limitation and is enforceable as such. The pound per hour limitation for CO emissions further restricts the level of dilution caused by presence of excess air. Therefore, no change is required to this condition.

Comment 3:

Carbon principles of IDI
IDI intends to take iron ore having mixed iron oxides ("Fe2O3 and FeO"), elemental iron, and several dozen other elements as contaminants; and produce mostly elemental iron having a variety of contaminants. The first goal is to remove oxygen by reducing the oxidized Fe+3 and Fe+2 to elemental Fe. This is done by admitting a reduction reagent, and the most common reduction reagent for oxidized iron is carbon ("C"). A low-cost source of C is coal, although coal has several dozen other elements as contaminants. The idea is to mostly cause 2 Fe2O3 plus 3 C to make 4 Fe and 3 CO2 (carbon dioxide). The CO2 is to simply blow away as an unregulated emission. The process is not perfect, and a large quantity of carbon monoxide is created and emitted too.

Heat must be added to cause, promote, and sustain the iron reduction reaction, as the reaction vessel, the rotary hearth furnace ("RHF"), loses considerable heat.

IDI knew well all of these and many other principles prior to seeking a PSD construction permit that it obtained 25 June 1997, 033- 8091- 00076 ("8091" incorporated herein by reference). 8091 authorizes IDI to use coal as an oxidized Fe reduction reagent.

I believe that 8091 and subsequent permits properly *do not authorize* IDI to use coal for the purpose of adding heat. If DEM disagrees, then please cite the applicable 8091 permit conditions.

It is my understanding that the iron ore and coal RHF charge mixture may be such that there is a stoichiometric surplus of C, i.e. more than 12 tons of C may be in the charge for each 32 tons of "bound" oxygen that is in the charge, but that the surplus is not for the purpose of adding heat as a result of combustion of the C with the free ambient atmospheric oxygen.

Best available control technology was required
With 8091, IDI was permitted a group of gas burners for the heat- adding purpose, and Best

Available Control Technology ("BACT"), a clever legal term wherein best does not mean best), was required for that initial permit for SO2.

"The term 'best available control technology' means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from *or which results from* any major emitting facility, which the permitting authority, on a case- by- case basis, taking into account energy, environmental, and *economic impacts* and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, *clean fuels*, or treatment or innovative fuel combustion techniques for control of each such pollutant...." (42 USC 7479(3), emphasis added)

Equipment capacity

The permit portion of the 15955 draft in no way mentions the total capacity (gross calorific value assumed throughout) as millions of British thermal units per hour ("BTU / hr") or as any other unit of energy of the gas burners to be removed nor of the coal burners to be added. Identify those specific values and incorporate them as requirements within the permit. Failure to limit the capacity is clear error.

BACT clean fuel

The *second* "Page 1" of Appendix A to the 15955 Technical Support Document ("TSD") mentions a 140 million BTU / hr "new coal for the purpose of adding heat" scenario with 17 million BTU / ton coal having 0.8% sulfur by weight.

None of those parameters are in the 15955 permit text. Thus, none are 40 CFR 52.21(b)(17) federally enforceable ("federally enforceable") permit conditions.

So IDI proposes to use a fuel having perhaps 0.94 pounds sulfur per million BTU in its new coal burners. Just what the limit is (if any) in re total sulfur in the "to be removed" gas burners fuel is unknown. However, the fuel used is likely less than 0.03 pounds sulfur per million BTU, and it is likely in accordance with 40 CFR 72.2 very low sulfur fuel(3).

So IDI proposes a fuel (for the purpose of adding heat) switch that would increase the sulfur content by a factor of thirty. The fact is, to get its 8091 PSD permit in 1997, IDI agreed to use BACT clean fuel. The fact is IDI has made no claim of scarcity of clean fuel or any credible claim of economic hardship in obtaining the clean fuel (for the purpose of adding heat) that it agreed to use in 1997.

There is no authority vested in DEM to grant to IDI a release from its 1997 8091 BACT obligation by acting directly contumaciously toward the clear congressional law. DEM must deny each and every portion of 15955 that would authorize new coal for the purpose of adding heat.

Reminder of SO2 rates

0.75	Pounds SO2 per ton of charge, totalling no more than 78 pounds SO2 / hr from RHF 1 was permitted by 8091 Condition 27, restated 6 December 2000 as 033- 12756- 00076 ("12756" ftp://ftp2.ai.org/pub/idem/oam/12756f.pdf incorporated herein by reference) Condition D.1.6, and 13 June 2001 as 033- 13911- 00076 ("13911" ftp://ftp2.ai.org/pub/idem/oam/13911f.pdf incorporated herein by reference) Condition D.1.6.
1.2	Pounds SO2 per ton of charge, totalling no more than 124.12 pounds SO2 / hr from RHF 1 is proposed by 15955 Condition D.1.6(a).
0.3	Pounds SO2 per ton of charge, totalling no more than 31.2 pounds SO2 / hr from RHF 2 was published 16 October 1998 as 033- 9708- 00076 ("9708" ftp://ftp2.ai.org/pub/idem/oam/9708d.exe incorporated herein by reference) draft Condition D.1.4.

Even though 9708 was not issued and RHF 2 was not built, there must have been some foundation for deriving the 0.3 pounds SO2 per ton of charge 9708 rate.

There appears within 15955 no explanation why 0.75 pounds SO2 per ton of charge, totalling no more than 78 pounds SO2 / hr, cannot and should not be retained.

BACT economic impact
I physically inspected the IDI application (that caused DEM to create the 15955 package) at the Butler, Indiana library. I have reason to believe that what I saw was as complete as IDI intended. I may have overlooked aspects of the application and I may have overlooked aspects of the 15955 package. I was looking in both for the aspects dealing with BACT economic impacts. In this quest, I was looking for the $ symbol and or the word dollar. I found zero relevant occurrences.

BACT is nothing if it does not require diligence in re each of the several comma delimited items of consideration that congress connected with the conjunction “and.” Economic impacts is one of those items and far be it from me to allege that IDI did not submit to DEM technical economic impact data. For I did find in the IDI application:

“If you’ll recall, IDI has been shut down since the summer of 2001. We have decided to restart the facility this Fall, but it will require modifications to the process to make it a successful project.” (Excerpt of IDI 30 April 2002 letter from Barry Smith to Janet McCabe at DEM incorporated herein by reference)

So IDI proposes a fuel switch that would increase the sulfur content by a factor of thirty. The fact is, to get its 1997 PSD permit, IDI agreed to use BACT clean fuel. The fact is IDI has made no claim of scarcity of the clean fuel it agreed to in 1997.

The 30 April 2002 “successful project” statement cannot stand as credible hardship, and the thirty times proposed fuel sulfur increase must be viewed as lunacy.

There is no authority vested in DEM to grant to IDI a release from its BACT obligation by acting directly contumaciously toward the clear Congressional law. DEM must deny each and every portion of 15955 that would authorize new coal for the purpose of adding heat.

Response 3:

As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Therefore, no response is needed to these comments by the commentator.

Comment 4:

Enforcement issues
DEM’s statement on 15955 TSD p. 5, “There are no enforcement issues related to this modification.” lacks candor. In fact, IDI and Steel Dynamics, Inc. (“SDI”), which co-habitats the IDI site and which is believed to be the majority owner of IDI, have a long historic practice of: 1) constructing emission units without proper permits, 2) operation of emission units without proper permits, and 3) operation of emission units with emissions greater than permitted. The history of SDI+IDI receiving no enforcement penalty or no penalty of substance as a result of DEM investigations and prosecutions is a near- equal period of time.

In Fact 16. of U.S. Environmental Protection Agency (“EPA”) Finding of Violation and Notice of Violation EPA- 5- 01- IN-13 (http://home.whitleynet.org/cow/img/SteelDynNOVFOV.pdf incorporated herein by reference), EPA noted a mixed oxides of nitrogen (“NOx”) limit of 0.51 pounds per ton of product, and in Violation 29., EPA noted a 1.34 pound per ton of product measured rate.

Rather than the obfuscatory, “There are no enforcement issues related to this modification.” text, DEM should have provided a complete list of all pending SDI+IDI enforcement actions together with a complete list of all SDI+IDI enforcement actions settled within the last year. Those two lists are requested to be response to comment items.

Response 4:

This issue has been responded to in the response 11 for the comments presented by Charles K. Therefore, no changes are required to any permit conditions.

Comment 5:

More specific and intriguing is the totally unexplained benevolence of IDI installing a new 100,000 dry standard cubic feet (“dscf”) per minute baghouse and stack 77. Detail the capital cost of the new asset together with the reason for its existence. Also tell clearly why it is 40 CFR 52.21(b)(20) “reasonably” possible for the particulate matter laden waste gas to pass through a stack now, but that it was not reasonably possible when 8091 was issued.

That is, does this not indicate a multiple year violation where BACT was not applied to permitted equipment and or where unpermitted equipment was operated? Where was DEM compliance, inspection, and enforcement? As response to comment, publish the entire record on this matter. Also identify what the maximum fine might have been. At $25,000 per day, $45 million could probably buy a fair sized baghouse.

<u>New baghouse</u>
The omission of Stack 77 from 15955 Condition D.1.16 testing is clear error as there would be no federally enforceable compliance determination. Further, the entire D.1.16 regimen should be repeatedly performed with less than 400 days between tests.

For totally new equipment, the 15955 Condition D.1.1(b) limit is nowhere near the state of the art. An additional limit of no more than 300 grains filterable PM10 per million dscf should be added.

Response 5:

The Permittee initially constructed the RHF equipment with a bottle system to remove the molten direct reduced iron from the RHF and transfer it to the submerged arc furnace located at the same place. This system of transfer of direct reduced iron proved highly susceptible to failures and therefore needed replacement. Now, the Permittee has constructed a bucket elevator system (in the discharge chute) to transfer the direct reduced iron between the two furnaces. This and other factors can cause the fugitive emissions to increase and make the work place unsafe for the workers. Therefore, Permittee decided to install a baghouse to further control the fugitive PM emissions. The issue of grain loading limit has been responded to in the response 16 for the comments presented by Charles K. Therefore, no changes are required to any permit conditions.

The testing requirement for Stack 77 for the baghouse controlling the discharge chute at RHF has been added in condition D.1.16 as shown before. The issue of repetition of test is dealt separately in response 10 to comments made by this commentator.

Comment 6:

<u>Errors</u>
A 15955 Condition D.1.18(3)(d) follows (3)(h).
The spelling of “gaureenteed” and “upto” on p. 2 of Appendix A to the 15955 TSD is in doubt.
Please explain “35” in the uncontrolled SO2 math on p. 2 of Appendix A to the 15955 TSD leading to 1,010 tons per year (“tpy”) SO2. 72,141 tpy of coal with 0.8% sulfur by weight leads to a 72,141

x 0.008 x 64 / 32 = 1,154 tpy SO2 potential. And, this is only a scenario, as the amount of coal and its sulfur content are not limited.

Please resolve why Permit 033- 9187- 00076 ("9187" ftp://ftp2.ai.org/pub/idem/oam/9187f.exe incorporated herein by reference) Condition 22 speaks of Stack 18, and 15955 Condition D.1.9 speaks of Stack 58.

Response 6:

The numbering in the condition D.1.18 is corrected. The IDEM, OAQ also decided to revise the non applicability of pressure drop readings and baghouse inspections in case the continuous opacity monitoring system is installed as follows:

D.1.18 Opacity Monitoring on the Rotary Hearth Furnace

The Permittee shall demonstrate compliance with condition D.1.2 by using any of the following methods:

1. Opacity readings by certified opacity observer:

   (a) Opacity from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks shall be performed at least once per shift during normal daylight operations. A certified opacity observer shall observe the opacity when the rotary hearth furnace is in operation.

   (b) These observations shall be taken in accordance with 40 CFR 60 Appendix A, Method 9 for at least two six (6) minute averages.

   (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

   (d) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

   (e) Conditions (a) through (c) above are not applicable should a continuous opacity monitor be installed which meet 40 CFR 60, Appendix B, Performance Specification 1, or a bag leak detector is installed as provided in this condition~~.; or~~

2. Install, calibrate, certify, operate, and maintain a continuous opacity monitoring system in accordance with 40 CFR 60, Appendix B, Performance Specification for measuring opacity from the rotary hearth furnace process baghouse (Stack 40) and associated discharge chute baghouse (Stack 77) stacks in accordance with 326 IAC 3-5-2 through 326 IAC 3-5-7.

   The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

   ~~If continuous opacity monitoring system is installed, then conditions D.1.19 and D.1.20 shall not be applicable; or~~

3. Installation and operation of a bag leak detection system. If bag leak detection system is installed, then condition D.1.19 and D.1.20 shall not be applicable. If the bag leak

detection system is inoperable, the Permittee shall substitute Conditions D.1.18 (1), D.1.19 and D.1.22 (b) and (c) to show compliance, until the bag leak detection system is operable.

The baghouse leak detection system shall meet the following criteria:

(a) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 0.0052 grains per dry standard cubic foot or less.

(b) The bag leak detection system sensor must provide output of relative particulate matter loading.

(c) The bag leak detection system must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level established or verified during a stack test.

(d) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(e) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time.

(f) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition.

(g) The bag leak detection system sensors must be inspected monthly and build-up must be removed from probe and insulator.

(h) The Permittee shall perform monthly QA checks including response tests and electronics drift checks and opacity readings to confirm the operation of the baghouse is in order.

(~~g~~**i**) The bag detector must be installed downstream of the baghouse.

(~~h~~**j**) In the event of a bag leak detection system alarm is triggered, the Permitee shall follow steps in condition D.1.21 of this permit.

(~~i~~**k**) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an excess emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The IDEM, OAQ acknowledges the spelling errors in the Appendix A of the TSD in this document. The correct spelling should be "guaranteed" and "up to". The TSD for the draft permit is not modified as it reflects the background information for the draft permit. All changes in the TSD are documented in the addendum to the TSD.

As the Permittee has withdrawn the request for the installation of 20 dual fuel burners in the RHF,

this calculation is no longer part of the record. For clarification purposes the number 35 was used from the AP-42 emission factor[1] for coal combustion for SO2 emissions as "35 S" for "Pulverized Coal, dry bottom wall fired sub-bituminous NSPS boiler".

The Permittee has renumbered the stacks at the site and present stack number for the submerged arc furnace is "58".

Comment 7:

Particulate matter BACT
The IDI modification is subject to BACT for particulate mater having an aerodynamic diameter of no more than 10 microns ("PM10") at a 40 CFR 52.21(b)(23) significance of 15 tpy, and p. 8 of the 15955 TSD mentions a 112 tpy increase.

As evidenced by 15955 Condition D.1.3, IDI intends to control the emission of NOx by a method that is believed to have an unlimited potential to emit ammonia ("NH3").

NH3 and SO2 form several prominent ammonium and ammonium hydrogen sulfite and sulfate compounds which are PM10. DEM knew or should have known that SO2 and NH3 are PM10 precursors prior to 23 May 2000.

The PM10 BACT requirement implicitly commands DEM to consider all that which contributes to PM10. At 67 FR 39606 (10 June 2002) "D.," EPA clearly said SO2 was meant to be a precursor to PM2.5 as stated 23 May 2000 via 65 FR 33269 *et seq*. PM2.5 is PM having an aerodynamic diameter of no more than 2.5 microns, and it is all PM10. Did DEM or IDI object to that becoming regulation? It appears from response to comment, 67 FR 39604 through 396607 (10 June 2002) that no commenter impeached the fact that PM10 *which results from* SO2 is a reality.

Thus it is clear error that DEM has not evaluated the harm of IDI emitting SO2 as a PM10 precursor.

The additional atmospheric PM10 on or near IDI, a pollutant subject to regulation under 42 USC Chapter 85, as a result of DEM permitting an excess of SO2 within, is an unrefutable BACT "environmental impact" within the law and regulation.

The detailed U.S. Congressional law, which reasonably is superior to the 40 CFR 52.21(b)(12) administrative regulation, does not require that the "pollutant subject to regulation," the PM10, be emitted to be considered as an impact that must be analyzed and considered. The law, having the conjunction *or,* thus simply requires that *all* of the PM10 *which results from* a major emitting facility (IDI) become BACT analysis and BACT limit obligations.

The knowledge date of SO2 being a PM10 precursor vastly predates 23 May 2000. The *or which results from* Congressional text date vastly predates 23 May 2000. The date of BACT applicability is the later of the two dates (knowledge and law). Thus, all of the dates in 67 FR 39602 *et seq.* (10 June 2002) that follow 23 May 2000 are not relevant to the BACT obligation that was created by the knowledge date more than two years previously. In this matter, there is no need to identify the date other than to reasonably show, as I have, that it preceded the date that DEM published 15955.

The fact that the *or which results from* phrase is not within 40 CFR 52.21(b)(12) is not relevant, as the Congressional definition is sufficiently detailed that no intent by Congress to grant to the EPA Administrator a privilege of superceding the Congressional definition can be inferred.

[1] See chapter 1.1-16, Table 1.1-3, Emission Factors for SOx, NOx, and CO from Bituminous and Subbituminous Coal Combustion of AP-42, Compilation of Air Pollutant Emission Factors, Volume I. Stationary Point and Area Sources, Fifth Edition.

Thus DEM's failure to account for SO2 related PM10 and to require minimal emission of SO2 by clean fuel obligation is clear error.

Response 7:

The additional SO2 emissions from the RHF were caused by the replacement of natural gas burners with coal firing burners. As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Therefore, no response is needed to these comments by the commentator.

Comment 8:

It is of note that DEM acknowledged some collateral impact in its response to comment for Nucor Steel, Montgomery County, Permit package 033- 9187- 00076 ("14297" ftp://ftp2.ai.org/pub/idem/oam/14297f.pdf incorporated herein by reference) Addendum to the 14297 TSD when it wrote on p. 13:

> "The ammonia emissions are a collateral environmental impact of employing SCR or [selective non-catalytic reduction] SNCR system to control NOx emissions and have been regulated by various agencies. The [1990 Draft New Source Review] NSR workshop manual by US EPA stated that, 'In limited other instances, though, control of regulated pollutant emissions may compete with control of toxic compounds, as in the case of certain selective catalytic reduction (SCR) NOx control technologies. The SCR technology itself results in emissions of ammonia, which increase, generally speaking, with increasing levels of NOx control. It is the intent of the toxics screening in the BACT procedure to identify and quantify this type of toxic effect. Generally, toxic effects of this type will not necessarily be overriding concerns and will likely not to affect BACT decisions. Rather, the intent is to require a screening of toxics emissions effects to ensure that a possible overriding toxics issue does not escape notice."
>
> "The IDEM, [Office of Air Quality] OAQ has limited the [Nucor] ammonia slip emissions to 25 ppmvd as recommended by the equipment manufacturer. Information about the ammonia slip from the other galvanizing line using SCR system to control NOx emissions is not available at this time."
>
> "The IDEM, OAQ uses the authority under 326 IAC 2-1.1-5 to "protect public health" to minimize the ammonia slip emissions from the SCR unit because this regulation prohibits issuance of any permits which will not protect the public health." (14297 ATSD excerpt)

It appears IDI has no NH3 limit. A 2 ppmv NH3 on a dry basis corrected to 15% oxygen limit with a 3-hour rolling averaging period limit controlled with continuous emission monitoring would be appropriate.

What is the permit limited NH3 tpy SDI+IDI possibility? If it is unlimited, then so state. For any given calendar year, what is the estimated tpy NOx that was not emitted by SDI+IDI as a result of their use of SCR and SNCR (and what was the reported SDI NOx emission for that year)? Setting aside the toxicity matter, it is clear that DEM did nothing in re the PM10 which results from NH3 and SO2. As evidenced by the 15955 draft, DEM has the intention of issuing yet another permit that, contrary to 326 IAC 2-1.1-5, will not protect public health.

Response 8:

The condition D.1.3 of the permit 033-15955-00076 has been revised as shown previously to minimize the emissions of ammonia slip during the operation of Selective Non Catalytic Reduction (SNCR) system.

The original construction permit 033-8091-00043 for the RHF did not set any limitations for the emissions of ammonia in the form of slip from the SNCR system. The IDEM, OAQ has added language in the NOx emission limitation condition to minimize ammonia slip using manufacturer performance specs and good work practices. The RHF is a unique process and very limited information is available about the operational data of the SNCR. Therefore, the IDEM, OAQ believes that the above change minimizes the ammonia slip emissions from the SNCR as part of the BACT for NOx emissions.

Comment 9:

Environmental compromise
Vast energy is expended to mine and transport limestone, mostly calcium carbonate, CaCO3, and vast additional energy is expended to convert it into calcium oxide ("CaO" lime). These activities have a considerably harmful effect on the environment and on human health. CaO is the traditional reagent to control SO2. CaO reacts with SO2 and ambient atmospheric oxygen to produce calcium sulfate, CaSO4, which is to then form particles of a size such that they may be removed by mechanical filtration PCE similarly as the ZnO does in the reaction above.

The use of K061 having above average ZnO as PCR has several benefits, not the least of which is the fact that K061 has a substantial iron content, and that recovery of the useful iron is wise.

However, K061 has several detriments too. The increase of neurotoxic lead ("Pb") emission is not inconsequential.

Response 9:

The commentator is supporting the reuse of EAF baghouse dust for the recovery of the materials. The hazardous constituents of the EAF baghouse dust has been discussed in detail in the response 4 for the comments made by Charles K. As previously demonstrated this modification has net increase in the Lead emissions below the significance levels under 326 IAC 2-2 (PSD) and therefore not subject to the requirements of BACT.

Comment 10:

Permit compromise
Disallow any new use of coal or any other fuel having more than 0.03 pounds sulfur per million BTU so as to preserve BACT clean fuels intent.

Allow any amount of K061 to be fed so long as the other permit conditions are met.

Preserve 13911 Conditions D.1.1 - D.1.3, D.1.5, D.1.6, D.1.8, and all related 13911 conditions. Reject 15955 Conditions D.1.3 and D.1.6.

Generally retain the 15955 D.1.7 verbiage, but reduce Stack 40 to 0.00020 pounds Pb per ton of charge, 0.0208 pounds Pb / hr, and reduce Stack 77 to 0.0065 pounds Pb / hr. These amounts of authorized Pb are sufficient to make K061 use as PCR and iron recovery therefrom viable.

Require quarterly Pb testing with K061 fed at the average rate and certification that the K061 fed during the tests contains a Pb concentration that is representative of the average K061 fed.

Response 10:

The Permittee has withdrawn the request for the replacement of up to 20 burners with dual fuel burners. Therefore, IDEM, OAQ has made changes shown earlier in this TSD addendum revising the conditions D.1.3 and D.1.6 to remove the use of coal as fuel. There are no limitations in the

permit other than the inherent quality restriction for the DRI produced, for the use of EAF baghouse dust as supplemental feedstock to be used in the RHF.

The Lead emission rates in condition D.1.7 have been revised as shown previously in this document. This change is based on information presented by the applicant in the Maumee Report[1]. As explained in the TSD for this permit the emissions increase from this change in the Lead emissions is less than the significant levels as identified under PSD rules under 326 IAC 2-2. Therefore, this emissions increase is not subject to the requirements of 326 IAC 2-2 (PSD).

The IDEM, OAQ has revised the testing condition to test for hazardous contaminant concentration in the EAF baghouse dust. The initial stack test is performed to establish the performance of the equipment as part of construction stage of the permit. This source is subject to the requirements of 326 IAC 2-7 (Part 70 Operating Permit). The OAQ will review the result of the initial stack test and consider future repeat testing as part of the Part 70 Operating Permit required for this source. For repeat testing frequency, conditions may be added to the Part 70 Operating Permit for this plant, which is at present in the draft stage with the IDEM, OAQ permit branch.

Further written comments were received from Mr. Stephen Loeschner of Fort Wayne, Indiana, on November 06, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

Comment 11:

This is supplemental comment on a draft 40 CFR 70 style permit modification (where there is no 40 CFR 70 permit) for Iron Dynamics, Inc. in DeKalb County, Indiana ("IDI") described in Indiana Department of Environmental Management ("DEM") draft permit document package 033- 15955-00076 ("15955") for a 40 CFR 52.21(b)(2) (All CFR cites herein are 1 July 2002.) Prevention of Significant Deterioration (42 USC 7470 _et seq._, 40 CFR 52.21) significant source modification to a direct iron reduction operation.

Listed hazardous waste K061 is pretty well-bounded with the words "electric and steel" as 40 CFR 261.32, 40 CFR 268.40, and Appendix XI to 40 CFR 268 have identical language, "Emission control dust/sludge from the primary production of steel in electric furnaces."

A case can be made that IDI's rotary hearth furnace ("RHF") does not make "steel." And it seems clear that IDI's RHF is not "electric." So that brings the questions.

What is the Resource Conservation and Recovery Act status of IDI's present "emission control dust/sludge?" Is it a solid hazardous waste? Is it a listed waste? What is its listing? Does it pass or fail the toxicity characteristic leaching procedure referenced in 40 CFR 261.24? What does it fail for?

What would those answers be if K061 is authorized and used as an iron-bearing feed material and or as a zinc- bearing sulfur pollution control reagent in the RHF per the 15955 draft permit?

Response 11:

The issues about the RHF baghouse dust have been discussed in response 15 for the comments made by Charlie G. The RHF baghouse dust will be subject to the applicable regulations depending upon its toxicity characteristics referenced in 40 CFR 261.24. No changes are made to any permit conditions.

[1] See memo "Predicted Emission, MR&E Project No. 01054", from Deane Horne of Maumee Research and Engineering, Inc., as enclosed in the application packet submitted on May 02, 2002, to IDEM for the modification 033-15955-00076, March 1, 2002.

Comments by Plumbers and Steamfitters Union, Local 166

Written comments were received from Mr. Alex J. Sagady & Associate and Attorney Charles Berger, on behalf of Plumbers and Steamfitters Union, Local 166, on November 06, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

General Comments

Introduction

The Plumbers and Steamfitters Union, Local 166, are submitting these comments for filing with the Indiana Department of Environmental Management, Office of Air Quality and the U.S. Environmental Protection Agency, Region 5.

The Plumbers and Steamfitters Union, Local 166 represent construction workers and their families who are employed in the construction trades in the geographical area of Butler, Indiana. These individuals perform plumbing, pipefitting and steamfitting work in conjunction with industrial construction work including the types of work necessary to construct and install the proposed modifications at Iron Dynamics, Inc. in Butler, Indiana.

The members of this Union are interested in maintaining a sustainable economy and sustainable economic development that can only be done when sound environmental policies and practices are followed. The proposed permit will provide for environmental degradation in the Butler, Indiana area that may very well jeopardize future jobs by making the environment less desirable for anyone to live and derive an income in this area and more importantly will create a less favorable environmental condition to allow for future economic development. Continued degradation of air quality can and has caused construction moratoriums and other restrictions on growth, which have reduced future employment opportunities for citizens in this state.

The individuals and their families that are represented by Plumbers and Steamfitters Union, Local 166 work in this community and will suffer the impact of detrimental projects towards the environment. All citizens, including the members of our client, breathe the same polluted air that is created and suffer the same health and safety impacts as all other citizens. The Plumbers and Steamfitters Union, Local 166 and its members have a significant interest in ensuring environmental laws protect its members as well as all other workers who are employed in the area.

The Plumbers and Steamfitters Union, Local 166 assert that the proposed modification project at Iron Dynamics, Inc should receive close scrutiny, particularly as the company fails to provide the counter-veiling economic benefits of decent wages and benefits during project construction. It is simply unacceptable and highly objectionable to both our union and our community for the proposed IDEM air permit for Iron Dynamics project to allow significant air quality degradation by either failing to use state of the art emission control techniques and or by failures of the permit to hold the company accountable for federal requirements on emission control performance.

The comments below describe how the proposed permit and project fails to comply with federal and state emission control requirements and how these facts show that the permit should not be granted in its current form. The Applicant is unlawfully attempting to evade federally required disclosure of all expected emissions and full prevention of significant deterioration review required under IDEM and EPA rules. We trust that IDEM will deny the permit application after full review of these comments.

Comment 1:

Request to IDEM to Hold a Public Hearing Concerning the Steel Dynamics Modification

Permit

The public notice for the draft permit contains the following provision:

"If adverse comments concerning the air pollution impact of this draft source are received, together with a request for a public hearing, such a hearing may be held to give further consideration to this application."

Commentors raise serious issues of technical errors and non-compliance with federally-significant preconstruction review and PSD BACT emission control requirements.

As a result of these significant technical and legal issues, by this document Commentors request a public hearing to be held concerning the proposed draft source modification permit, including an extension of the comment period until the time of the public hearing and the holding of a public hearing during evening hours in the Butler, IN area so that concerned working people and local union members can attend.

Response 1:

Mr. Paul Dubenetzky of IDEM, OAQ discussed the matter of holding the public hearing with Mr. Charles Berger, representing the Plumbers and Steamfitters Union. Mr. Berger in this discussion and subsequent email on December 9, 2002, stated that the IDEM, OAQ does not need to hold a public hearing for this permit. Therefore no public hearing was conducted for this permit.

Comment 2:

The Iron Dynamics Application is Incomplete and the Company's Best Available Control Technology Demonstration is Defective and IDEM's Proposed Approval of the Company's Application is in Error

Iron Dynamic's Application and IDEM's Approval of the Company's Application and BACT Submittal Must be Properly Supported, Complete and Incorporate "Top Down" Best Available Control Technology Review

U.S.EPA has repeatedly stated the required elements for state PSD decisions made under federal authority, such as the proposed permit for the Iron Dynamics PSD major modification:

"All major stationary sources undertaking a major modification subject to the PSD regulations of title 40 Code of Federal Regulations section (40 CFR) 52.21 must conduct an analysis to ensure the application of BACT. The requirement to conduct a BACT analysis and determination is set forth in section 165(a)(4) of the Clean Air Act, and in the implementing regulations at 40 CFR 52.21(j). Further, under 40 CFR 52.21(n), the applicant must submit and substantiate all information necessary to perform an analysis and make determinations. In these regulations, BACT is defined as "... an emission limitation based on the *maximum degree of reduction* for each pollutant subject to regulation under the ACT which would be emitted from ... any source ... which is determined to be *achievable* taking into account energy, environmental and economic impacts." It should be noted that possible grounds for overturning a BACT decision include an inappropriate review (BACT procedures not correctly followed), an incomplete review (BACT decisions not correctly justified), or a review based on false or misleading information."[1]

U.S. EPA first articulated specifically what is meant by a "top-down" Best Available Control

[1] *October 6, 1999 Letter from Robert B. Miller, Chief, Permits and Grants Section, U. S. EPA Region 5 to Lynn Fiedler, Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality concerning Cadillac Renewable Energy PSD Major Modification Permit; Available at http://www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/cadillac.pdf*

Technology review in 1989.[1] A later articulation is summarized:

"In brief, the top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent--or "top"--alternative. That alternative is established as BACT unless the applicant demonstrates, and the permitting authority in its informed judgment agrees, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not "achievable" in that case. If the most stringent technology is eliminated in this fashion, then the next most stringent alternative is considered, and so on."[2]

In EPA's Draft 1990 New Source Review Workshop Manual, the step by step process for a "top down" BACT review is outlined and the following process must be conducted to ensure that a valid BACT determination has been made; EPA describes a 5 step process for conducting such a "top down" process:

"STEP 1: Identify All Control Technologies.
- LIST is comprehensive (LAER included).

STEP 2: Eliminate Technically Infeasible Options.
- A demonstration of technical infeasibility should be clearly documented and should show, based on physical, chemical, and engineering principles, that technical difficulties would preclude the successful use of the control option on the emissions unit under review.

STEP 3: Rank Remaining Control Technologies by Control Effectiveness.
Should include:
- control effectiveness (percent pollutant removed);
- expected emission rate (tons per year);
- expected emission reduction (tons per year);
- energy impacts (BTU, kWh);
- environmental impacts (other media and the emissions of toxic and hazardous air emissions); and
- economic impacts (total cost effectiveness, incremental cost effectiveness).

STEP 4: Evaluate Most Effective Controls and Document Results.
- Case-by-case consideration of energy, environmental, and economic impacts.
- If top option is not selected as BACT, evaluate next most effective control option.

STEP 5: Select BACT
- Most effective option not rejected is BACT."

Implicit in IDEM's proposed approval of the Iron Dynamics PSD major modification permit and in publication of the Technical Support Document is an IDEM finding that the Iron Dynamics application is complete and properly supported. The Applicant claims[3] to have incorporated a "top down" BACT demonstration in its application; the IDEM Office of Air Quality Technical Support Document claims[4] that the application has incorporated an acceptable BACT

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[1] *See June 13, 1989 Transmittal of Background Statement on "Top Down" Best Available Control Technology from John Calcagni, Director, EPA Air Quality Management Division to Regional Air Directors*

[2] *EPA 1990 Draft NSR Workshop Manual, P. B.2*

[3] *See Section 2.1, Page 2 of the Iron Dynamics April 2002 application.*

[4] *October, 2002 IDEM Technical Support Document on Iron Dynamics PSD Permit by Gurinder Saini at pages 10, 12 and 13*

determination for the Rotary Heath Furnace (RHF) burner combustion of coal and the new fugitive emissions control baghouse and the increase in stack discharge flow rate for the Submerged Arc Furnace baghouse.

In subsequent sections Commentors will show that Iron Dynamics application is incomplete, not properly supported and that the BACT demonstration and IDEM's approval of both the application and BACT demonstration are in error.

Issues Relating to Best Available Control Technology Determination for Sulfur /Dioxide Emissions and Acid Gas Emission Characterization and Control

The Application and Proposed Permit Fails to Consider Use of Cleaner Coal, Coal with a Lower Emission of Sulfur per Million BTU Heat Input and Use of Coal Sulfur Content Limits, Rendering the Sulfur Dioxide BACT Determination Unapprovable and in Error for Coal Combustion in the Rotary Hearth Furnace

IDEM must ensure that the sulfur dioxide emission limitation reflects requirements for Best Available Control Technology (BACT):

"*Best available control technology* means an emissions limitation (including a visible emission standard) based on the ***maximum*** degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification ***through application of production processes or available methods, systems and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant***.

In no even shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61.

If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particulate emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results."[1] (Emphasis added)

In order to do a "top down" BACT review and in order to ensure that sulfur dioxide BACT limits reflect the "maximum reduction.....taking into account energy, environmental and economic impacts and other costs," the Application must consider the use of clean fuels, maximum limitations on coal sulfur content and limitations on the amount of sulfur dioxide emissions per MMBTU heat input, which are all technically feasible and "available methods" for limiting sulfur dioxide emissions.

Applicant's submittal is not approvable as a "top down" BACT demonstration and the proposed sulfur dioxide limits are not acceptable as valid BACT emission limitations because no consideration was given to use of enforceable limitations on fuel sulfur contents and use of coal with a lower sulfur dioxide emission per million BTU of heat input. Applicant's emission

[1] *40 CFR §52.21(b)(12); See also 42 USC §7479(3)*

calculation[1] assumes 8500 BTU/lb coal with a sulfur content of 0.8%; however the proposed permit contains no enforceable provisions on fuel sulfur, BTU content or sulfur dioxide emissions per MMBTU that would have an effect on potential to emit or the BACT emission control level. The application contains no analysis of the effects of accepting limitations on these parameters on the BACT determination for sulfur dioxide.

Combustion of 8500 BTU/lb coal with sulfur content of 0.8% is equivalent to about 1.65 lbs of sulfur dioxide per million BTU heat input. In practice, Applicant appears to accept use of poor quality lignite-grade coal as the fuel of choice, rather than 11,500-12,000 BTU/lb low sulfur bituminous coal with ratings of 1.2 lbs of sulfur per MMBTU (and less) that are frequently used in NSPS-compliant electric utility applications. No aggregate or incremental cost analysis on sulfur dioxide controlled is provided on any such fuel matter and/or emission control technique..

Applicant's sulfur dioxide submittal must be considered incomplete, unapprovable and not supported on the record in the absence of a detailed discussion on why better quality coal with a lower sulfur heat input cannot be used to limit sulfur dioxide emissions in addition to any post-combustion scrubbing provided. A "top-down" BACT analysis must consider combinations of available controls in the mix of emission controls considered. Applicant has not properly carried its burden out and IDEM's approval of Applicant's BACT determination in this area is in error.

In a future revision of the sulfur dioxide BACT determination, Applicant must consider such alternate fuels and limitations, provide technical and economic feasibility analysis and follow the detailed top-down procedures in articulating its demonstration on the record. None of this is present in the current BACT submittal and any claims to the contrary are rebutted by Commentor's holding that no such demonstrations are articulated in the Application according to the details contained in the 5 step "top down" process.

The Applicant's Sulfur Dioxide BACT Determination for Coal Combustion in the Rotary Hearth Furnace Fails to Establish a Recognizable "Top Down" Basis for the Lime Spray Dryer Scrubbing Mode and the Zinc Oxide Scrubbing Mode and Fails to Consider the Sulfur Dioxide Emission Reduction Potential of Using Both Types of Scrubbing

The Applicant's sulfur dioxide BACT demonstration and the IDEM sulfur dioxide BACT permit limits do not have a recognizable "top down" basis for the 80% efficiency used for lime spray drying scrubbing and 90% efficiency for zinc oxide scrubbing. Both efficiency figures are assumed in the sulfur dioxide BACT demonstration and resulting BACT emission limitation calculations as a fiat with absolutely no basis stated, either as to physical justification or "top down" process justification.

EPA's AP-42 document for bituminous coal combustion notes that lime spray dryer sulfur dioxide control efficiency is from 70%-90%, whereas the BACT determination and IDEM Technical Support Document assume 80% control for this sulfur dioxide control mode. As proposed the BACT demonstration and BACT emission limitations cannot be approved without a clear showing as to the basis for the 80% control assumption during sole lime scrubbing mode operation. The Applicant and IDEM must show why 90% should not be accepted as the BACT-required control efficiency.

Similarly, the Applicant's demonstration attempts to assert zinc oxide sulfur dioxide control efficiency by simple fiat with a one sentence justification:

"For the purpose of this emission prediction we estimate that 95% of the sulfur dioxide is captured by the zinc oxide fume."[2]

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[1] *See Appendix B, Emission Calculations of the original Iron Dynamics, Inc. April 2002 PSD Application*

[2] *Appendix C, Maumee Report, Deane Horne Memo, P. 2*

Both the Applicant and IDEM then go on to assume 90% efficient scrubbing for zinc oxide in the flue gas in the calculation of sulfur dioxide BACT emission limits without any further statement of basis. This is an unacceptable leap to a conclusion that is not supported on the record. For example, there is no analytical information provided on typical chemical constituents of electric arc furnace dust which is to be the primary source of the zinc oxide. At a minimum, the stoichiometric basis for reactions for zinc oxide control of sulfur dioxide should be asserted and there should be a basis showing why zinc oxide driven out of these materials will be sufficient to at least react with 90% of the sulfur dioxide that is generated in the process. Nothing like such a demonstration for this unproven level of control efficiency is contained in the application.

"Top down" BACT review requirements for sulfur dioxide must consider that simultaneous scrubbing by zinc oxide and lime spray drying is technically feasible. Applicant has not shown why such an approach to sulfur dioxide control should not be considered.

Decisions on the Mix of Sulfur Dioxide Emission Controls for Coal Combustion in the Rotary Hearth Furnace Have the Potential to Affect Emissions of Unregulated Air Contaminants and Must be Considered as part of Environmental Review Decisionmaking in the Sulfur Dioxide BACT Determination Process

Decisions on sulfur dioxide control techniques have the potential to affect emissions of unregulated air contaminants. The first time this doctrine was clearly articulated was in a case of a municipal waste combustor in California in which citizen commentors appealed a decision of EPA Region IX on a proposed PSD permit for the North County Resource Recovery Associates.[1]

In a remand order back to EPA Region IX, then-EPA Administrator Lee Thomas wrote as to petitioner's allegations:

"Among the reasons the petitioners present for granting review is Region IX's alleged failure to establish emission limitation for all pollutants, including hazardous pollutants, that will or could possibly be emitted from the facility; the alleged inadequacy of Best Available Control Technology (BACT) determinations;..... With one exception, Region IX has addressed each of petitioners' allegations and has provided rational explanations for not making any alterations in its permit determination.

The exception concerns Region IX's assertion that EPA lacks the authority to "consider" pollutants not regulated by the Clean Air Act when making a PSD determination. This assertion is correct only if it is read narrowly to mean EPA lacks the authority to imposed limitations or other restrictions directly on the emission of unregulated pollutants. EPA clearly has not such authority over emissions of unregulated pollutants.

Region IX's assertion is overly broad, however, if it is means as a limitation on EPA's authority to evaluate, for example, the environmental impact of unregulated pollutants in the course of making a BACT determination for the regulated pollutants. EPA's authority in that respect is clear.....

As defined in §169(3) the term BACT refers to an "emission limitation" that is set on a case-by-case basis for regulated pollutants, "taking into account energy, environmental, and economic impacts and other costs" associated with the particular emission control system that is selected to achieve the BACT emissions limitation. 42 USC §7479(3) (emphasis added) (40 CFR §52.21(b)(12).

Hence, if application of a control system results directly in the release (or removal) of pollutants that are not currently regulated under the Act, the net environmental impact of such emissions is

[1] *EPA Administrative Decision In the Matter of North County Resource Recovery Associates, Remand Order, PSD Appeal No. 85-2, June 5, 1986.*

eligible for consideration in making the BACT determination. The analysis may take the form of comparing the incremental environmental impact of alternative emission control systems with the control system proposed as BACT; however, as in any BACT determination, the exact form of the analysis and the level of detail required will depend upon the facts of the individual case. Depending upon what weight is assigned to the environmental impact of a particular control system, the control system proposed as BACT may have to be modified or rejected in favor of another system.

In other words, EPA may ultimately choose more stringent emission limitations for a regulated pollutant than it would otherwise have chosen if setting such limitations would have the incremental benefit of restricting a hazardous but, as yet, unregulated pollutant." (Decision at p 3-4)

The precedent that PSD BACT determinations must consider the effects of control technology decisions on unregulated pollutants as part of the environmental impact analysis has been extended and clarified in EPA's transitional guidance memo after the passage of the 1990 Clean Air Act Amendments.

"Toxic Effect of Unregulated Pollutants Still Considered in BACT Analysis -- Based on the remand decision on June 3, 1986 by the EPA Administrator in North County Resource Recovery Associates (PSD Appeal No. 85-2), the impact on emissions of other pollutants, including unregulated pollutants, must be taken into account in determining BACT for a regulated pollutant. When evaluating control technologies and their associated emissions limits, combustion practices, and related permit terms and conditions in a BACT proposal, the applicant must consider the environmental impacts of all pollutants not regulated by PSD. Once a project is subject to BACT due to the emission of nonexempted pollutants, the BACT analysis should therefore consider all pollutants, including Title III hazardous air pollutants previously subject to PSD, in determining which control strategy is best."[1]

In the present case, the mix of sulfur dioxide emission controls and selection of fuels must consider the effect of these decisions on such unregulated air contaminants, including emissions of hydrochloric acid, hydrogen flouride, sulfuric acid aerosal, mercury and particulate-phase airborne toxicants. If there is sole reliance on zinc oxide scrubbing for emission control (under some plant operating conditions) then potential benefits associated with flue gas cooling by lime spray drying and subsequent agglomerization of toxicant particles and consequences for mercury control must be taken into account as part of the environmental review aspects of the sulfur dioxide BACT determination on coal combustion in the rotary hearth furnace. In addition, lime spray drying is known to be efficacious for the control of hydrochloric acid, hydrogen flouride and sulfuric acid, but the effect of zinc oxide on these pollutants is not established in the application. Applicant has failed completely to incorporate any review for unregulated air contaminants into consideration of alternative sulfur dioxide control measures from the aspect of unregulated acid gases and airborne toxicants.

Response 2:

As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Therefore, some of the items in the above comment are no longer applicable. The IDEM, OAQ responses to other items not affected by this change are as follows:

1. The 80% efficiency of control for the lime scrubber is the BACT for the SO2 emissions from the RHF as determined in the construction permit 033-8091-00043 issued on March 24, 1998. The 80% efficiency of control for the lime scrubber was based on the

[1] *March 11, 1991 Memo by John Seitz, Director of Office of Air Quality Planning and Standards, U.S. EPA on New Source Review Program Transitional Guidance*

manufacturer specification for this equipment taking into account the air flow and concentration variability in the exhaust gases. The operation of the RHF is very distinctive from the operation of a Pulverized Coal (PC) boiler. Therefore, it is inappropriate to consider the control efficiencies for the PC boiler as a benchmark for the RHF's reduction process. In the absence of more reliable information about the SO2 control strategies for the emissions from RHF, IDEM, OAQ relied on the best available information.

2. The Maumee Research and Engineering, Inc. conducted estimation of emissions from the RHF based on the short campaigns of this plant in the recent past. This study's basis for the reduction of SO2 emissions using Zinc Oxide was the estimated 10% EAF baghouse dust content in the feedstock for the RHF. This study is an estimation of emissions and does not reflect the actual operation emission rate. Therefore, IDEM, OAQ decided to provide a cushion in the emission limit based on the unknown nature of this process and to maintain compliance on the continuous basis. This argument is further supported by Environmental Appeals Board position in the matter of Three Mountain Power permit[1] as follows:

   "Additionally, Region IX asserts that the Federal Facility data, while encouraging, do not account for all the factors that must be considered in establishing a BACT limit and are not sufficient to mandate a lower limit as BACT. *See* Region IX's Response to Petition at 21.

   Moreover, the District argues that it is erroneous to suggest that:

   [T]he CO BACT should be determined strictly from operational data from a 32 MW gas turbine application without regard to specifying an emission limitation that the proposed facility can demonstrate compliance with under all operational circumstances and have sufficient margin over actual operational data to avoid continual compliance difficulties."

   The Board further stated "The Board has recognized that permitting agencies have the discretion to set BACT limits at levels that do not necessarily reflect the highest possible control efficiencies but, rather, will allow permittees to achieve compliance on a consistent basis."

   Based on above, the IDEM, OAQ feels that it has provided adequate cushion to minimize the SO2 emissions during the use of EAF baghouse dust in the RHF to show compliance on continuos basis.

As the Permittee has withdrawn the request for the combustion of coal in up to 20 burners in the RHF, there is no contribution to the emissions of hydrochloric acid, hydrogen fluoride, sulfuric acid mist, mercury and particulate HAPs from the combustion of Natural Gas only. The HAP emissions from the operation of RHF with EAF baghouse dust has been discussed in detail previously. No changes are made to any permit conditions.

Comment 3:

Simultaneous Compliance with Section D.1.6(a) of the Proposed Permit and the Proposed Sulfur Dioxide Emission Limitation During Lime Spray Injection Will be Physically Impossible for Sulfur Dioxide Control of the Rotary Hearth Furnace

Section D.1.6 of the proposed permit reads as follows:

"(a) When using lime injection of wet scrubber as control, shall not exceed 1.2 pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed 124.12

[1]PSD Appeal No.01-05 before Environmental Appeals Board for Three Mountain Power LLC decided on May 30, 2001.

pounds per hour."

Commentors interpret the most probable meaning of this awkward language as ensuring that the lime injection rate shall not exceed 1.2 pounds per ton of material charged into the furnace.

The first objection to such language is that any legally enforceable requirements on lime scrubbing material injection to ensure the required sulfur dioxide control should be a floor and not a ceiling on the lime injection rate.

The second objection to this language is that a maximum limitation of 1.2 pounds of lime injection to the flue per ton of material charged into the furnace [or a minimum of such injection for that matter] cannot possibly ensure compliance with the emission limitation for sulfur dioxide given other specified conditions.

One mole of Calcium Oxide (56 gr/mole) mixed with water is necessary to convert 1 mole of Sulfur Dioxide (64 gr/mole) into Calcium Sulfate. At an admitted 8.2 ton-coal/hour coal consumption rate just for the burner coal (and not for the coal in the ore-coal mix), 229.6 lbs of sulfur dioxide are generated per hour. If 80% of this sulfur dioxide is reacted with lime, 184 lbs/hour of sulfur dioxide must be reacted. However, the stoichiometric ratio is 56 grams of lime to 64 grams of sulfur dioxide. Accordingly, 161 lbs/hour of lime (CaO) is required to react with 184 lbs of sulfur dioxide.

Condition D.1.6 appears to limit the maximum lime injection to 1.2 lbs of lime per ton of furnace material introduction [in this case carrying out the calculation solely for the combustion burner coal]. This condition would thus limit the lime addition rate to 9.84 lbs of lime per hour, thus making the 80% control stoichiometrically impossible.

Response 3:

The commentator's interpretation of condition D.1.6 is incorrect. The condition in total as modified in this document is reproduced below:

D.1.6 Sulfur Dioxide (SO2) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (Control Technology Review: Requirements) and CP-033-8091-00043, issued on June 25, 1997, the sulfur dioxide emissions from the rotary hearth furnace process baghouse (Stack 40) shall be controlled by lime injection, wet scrubber and/or use of EAF dust as supplemental feedstock. The SO2 emissions shall be limited as follows:

(a) When using lime injection or wet scrubber as control, **SO2 emissions** shall not exceed **0.75** ~~1.2~~ pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed **78** ~~124.12~~ pounds per hour.

(b) When using at least 2 tons per hour of EAF dust as supplemental feedstock as control, shall not exceed **0.4** ~~0.97~~ pounds per ton of material charged into the furnace. The SO2 emissions shall not exceed **39.0** ~~101~~ pounds per hour. **If the stack test required under Condition D.1.16 shows that this limitation is not achievable in practice, the Permittee can request the Department to re-evaluate the D.1.6 (b) to adjust this limitation. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit modification.**

The condition D.1.6 in this permit supersedes the Operating Condition 27 in the CP 033-8091-00043, and condition D.1.6 in the MSM 033-13911-00076.

The IDEM, OAQ has clarified by addition of words 'SO2 emissions' that the limit of 1.2 pounds per ton revised to 0.75 pounds per ton apply to the SO2 emissions, and not to the lime injection rate as interpreted by the commentator.

Therefore, rest of the comment 3 is not relevant to the permit and no change is required to any permit condition.

Comment 4:

The Application is Deficient Because it Fails to Quantify and Evaluate Sulfuric Acid Aerosol Emissions and Hydrogen Chloride

The Application is deficient because it fails to characterize sulfuric acid emissions from the Rotary Hearth Furnace as modified. Because of the afterburner control of the process, oxidation of sulfur dioxide will increase the amount of sulfuric acid aerosol that would be normally expected (about 1% of the sulfur dioxide emissions in the flue gas).

At 2% conversion of sulfur dioxide to sulfuric acid aerosol and at 101 lbs of sulfur dioxide per hour, 8.85 tons per year of sulfuric acid aerosol would be emitted. This is higher than the PSD significance level for sulfuric acid of 7 tons per year that would require BACT review for sulfuric acid aerosol.

Hydrogen chloride and hydrogen flouride are CAA Section 112 HAPs, which will be emitted from the subject Rotary Hearth Furnace coal combustion process. Yet this HAP is erroneously excluded from analysis and omitted from the HAP emission characterization.

Response 4:

The coal combustion process in up to 20 burners is no longer part of this permit. Therefore, the commentator's concerns about the additional emissions of HAPs and sulfuric acid mist from the RHF are no longer applicable and no changes are required to any permit conditions.

Comment 5:

The Failure to Quantify Hydrogen Chloride and Hydrogen Flouride Emissions, the Failure to Provide Coal Analysis and Other Failures Have Significant Consequences for Regulation of the Subject Facility

Uncontrolled emissions associated with the commencement of coal combustion would be 43 tons per year for hydrogen chloride and 5.4 tons for hydrogen flouride. At this writing Commentors have not yet located information on the coal input rate associated with DRI raw material preparation, but it appears that this coal input rate is even larger than the coal firing rate for the new coal/gas burners. It is not an unreasonable estimate to assume the potential for as much as 90-100 tons of uncontrolled emissions of hydrogen chloride and hydrogen flouride. The equilibrium uncontrolled emission rate of acid gases may even be larger if such gases evolve from recycling of baghouse collected PM containing metal chlorides into the process.

Even at 80% acid gas control, the proposed facility may well be a major source of HAPs for hydrogen chloride. IDEM appears not to have ever considered this possibility. IDEM does not have any reliable information on HCl and HF emission control efficiencies with the envisioned reliance on zinc oxide fume scavenging of acid gases.

If the facility is a major source for HAP emissions, such recognition of the combined Iron Dynamics/Steel Dynamics facility as a major HAPs source may have consequences for other regulation, such as the MACT Coil Coating Subpart TT applicability for the proposed so-called "minor" coal coating modification at Steel Dynamics. IDEM appears to have ignored the matter of

hydrogen chloride and hydrogen flouride emissions from these combined facilities in past permitting and technical evaluations. Such disregard on this HAP characterization issue for this combined facility should end now before any further granting of permits is made by IDEM to this facility.

Response 5:

The coal combustion related emissions are no longer part of this permit because of reason stated earlier.

Comment 6:

Issues Relating to Best Available Control Technology for Particulate Matter

Applicant Has Inappropriately Narrowed the Search for Other Example PM Emission Limitations in the Ferrous Metal Industry for PM Emissions from the Rotary Hearth Furnace Combustion Exhaust and Fugitive Control Baghouse

Applicant first claims that their search of the EPA RBLC database shows no Direct Reduced Iron (DRI) facilities. However, this assertion is in error since two such database entries are shown for ID, one of which was never constructed. The other entry is for AL-0086 for a DRI facility at Tuscaloosa Steel Corporation which is a 150 ton/hour DRI plant with PM limits of 1.5 lb-PM/hour and 0.02 lb-PM/ton of DRI. At this writing it is unknown whether the Tuscaloosa facility incorporates coal burning for BTU input.

Applicant's facility is a smaller 96 ton-DRI/hour facility being proposed with a much higher PM emission limitation of 13.4 lbs/hour. Applicant and IDEM must explain on the record why a lower PM emission limit should not be imposed.

Applicant's BACT analysis for PM admits that baghouse controls are in widespread use as the "...predominate control device for EAF's and rotary hearth furnaces."[1] Applicant goes on to ignore all of the baghouse-based PM limits for EAFs contained in the EPA RBLC database. Such failure constitutes error because EAF PM control by baghouse represent control examples of similar gas streams with similar flue gas PM inlet loading, temperature and volume characteristics. Applicant's excessively narrow source subcategorization to its plant alone ignores the requirement that control of similar gas streams can be used as example controls for technology transfer in BACT determinations. Applicant's PM BACT review is thus inadequate and in error since there has been no comprehensive review of existing PM control BACT decisions for both ferrous metal industry furnace combustion/process flue gas PM control and furnace charging/discharging fugitive emissions control.

Response 6:

The DRI facility in Alabama at Tuscaloosa Steel, does not use a Rotary Hearth Furnace. Instead it uses a Shaft Furnace to produce DRI. The operation of this equipment in no way resembles the RHF at SDI. Tuscaloosa tried to use a gas based reductant, not coal. Also Tuscalloosa does not employ the discharge chute baghouse.

In communications with personal at Tuscaloosa Steel and at Alabama Department of Environmental Management, it transpired that Tuscaloosa has shutdown the DRI plant for a long time because of failures and in operability of equipment. So even though there did exist a determination for DRI manufacturing the same was not relevant to be considered in the BACT analysis due to very different nature of project.

[1] *Iron Dynamics April 2002 Application at Section 2.2.1, Page 2*

The operation of an Electric Arc Furnace (EAF) is also very different in nature than the operation RHF. The basic difference between the two processes from the air emissions point of view is the nature of airflow. The airflow in the EAF baghouse is extremely large (in the range of one million cubic feet per minute) with temperature in the range of 200^{o} F. The airflow in the RHF baghouse is much smaller (360,000 cubic feet per minute) with high operating temperature in the range of 350^{o}F. Therefore, the control technologies applicable to the EAF are not necessarily transportable to the RHF operation and are therefore considered non-applicable. In any event a review of the RBLC shows no EAF baghouses with lower demonstrated PM/PM10 (which include filterable /condensable components) emission limits.

Therefore, no changes are required to any permit conditions.

Comment 7:

Applicant Has Failed to Justify on the Record Why More Stringent PM Limitations Achievable with Different Bag Material Should Not be Required for the Rotary Hearth Furnace Combustion Flue Gas and Fugitive Emission Control Train

The Applicant admitted in the submittal[1] that Teflon-coated Nomex bags could achieve a lower PM emission rate of 0.004 grains/DSCF. However nothing in the application shows why PM limits based on this rate were not adopted. Under "top down" BACT determinations all technically feasible control options must be considered and the application must document why such control options were ruled out. No content of the application provides this basis on the record with any technical, environmental and/or economic justification.

Response 7:

The statement about Nomex Teflon Coated bags achieving 0.004 grains per dscf is part of the discussion in the Maumee Report. In discussion with the company and the manufacturer it transpired that the above emission rate is only for the filterable PM emissions. In case of the RHF the limit of 0.0052 grain per dscf include both filterable and condensable components. Therefore during the PM10 emissions (and the PM emissions) from the RHF are subject to more stringent filterable limit only than the 0.004 grain per dscf by Teflon. The present bag supplier for SDI, the BHA Group, Inc.[2], confirmed the same. The information supplied by BHA compares the Nomex bags with the BHA Bags supplied to IDI. It shows that the control efficiency for the BHA bags is at par or superior than the Nomex bags. Therefore, IDEM, OAQ believes that the present limitation in the permit represents the most stringent BACT condition. No change is made to any permit condition.

Comment 8:

The Proposed Permit Provides No Visible Emission Limitation on the SAF Discharge Stack

PM BACT determinations must include a visible emission limitation under the definition of BACT.[3] No such visible emission limitation is provided for the SAF stack. Commentors suggest that a 3% opacity limitation be imposed for this discharge stack.

Response 8:

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[1] *Iron Dynamics Application, Appendix C, Maumee Report*

[2] Personal discussion Robin Linton of BHA Group, Inc. on December 5, 2002.

[3] *See the definition of BACT quoted in Section 3.2.1 of these comments.*

The condition 27 in the construction permit 033-9187-00043 issued on March 24, 1998 limits the visible emissions (opacity) from the SAF stack to no more than 3% determined by a six minute average. Therefore no change is required to any permit condition.

Comment 9:

Condensible Particulate Matter

The proposed permit and Technical Support Document should be clarified to ensure that the required stack particulate emission studies and test methods include both filterable and condensible particulate matter for compliance purposes.

Response 9:

The response 9 to the comments made by Charles K. deals with the issue of condensable emissions from this process. Therefore no change is required to the permit.

Comment 10:

Issues Relating to Best Available Control Technology for Nitrogen Oxides for Coal Combustion in the Rotary Hearth Furnace
Applicant's NOX BACT Submittal and the IDEM Technical Support Document Do Not Address Low NOX Burners

Low NOX burner technology is technically feasible for both the 20 replacement gas/coal fired burners in the Rotary Hearth Furnace as well as in the downstream flue afterburner. Accordingly, a "top down" BACT analysis must address the use of low NOX burner technology in both of these locations.

Moreover, the NOX emission calculation and characterization appears to be defective because it does not account for NOX generated by the afterburner.

Nothing in the application addresses the matter of low NOX burners for these burner applications. Accordingly, the NOX BACT demonstration must be considered incomplete and unapprovable in the absence of such information explicitly placed on the record.

Language at section D.1.3 of the permit does talks about "use of low-NOX natural gas-fired burners," which is carried over from the previous permit. However, the burners formerly in use are being replaced with new combination gas/coal-fired burners and this condition as written does not clearly and unequivocally assert that the new gas/coal-fired burners are, in fact, low NOX burners and is not written to countenance the combination burners for both coal and natural gas as low NOX burners.

Commentors concern about the failure of the application to articulate a NOX BACT choice for low NOX burners is buttressed by the Applicant's use of AP-42 NOX emission calculations for coal combustion with a factor of 7.4 lbs NOX/ton coal combusted which does not represent use of low NOX burners but rather is a reflection of uncontrolled NOX emissions from AP-42 for dry bottom, wall-fired bituminous coal combustion. Use of an inappropriate emission factor not representing the performance of low NOX burner technology means that the NOX BACT emission limitations of the proposed permit are being set too high and do not, in fact, represent an appropriate NOX BACT level of control.

Applicant's Assumes NOX Roll-back From Selective Non-Catalytic Reduction Does Not Reflect "Top Down" BACT Analysis

EPA briefing materials on SNCR technology indicate that maximum NOX reductions from SNCR

range from 50%-70%.[1]Emission Standards Division, U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards – EPA-453/R-94-065 In some steel industry applications, the combination of SNCR plus low NOX burners is expected to product NOX reductions of 80%.[2] Even the AP-42 document for coal combustion shows SNCR NOX control efficiency ranges as high as 60%.[3]

Applicant has asserted that 50% control from SNCR is reflective of BACT for NOX with no explanation or basis as to why higher amounts of NOX reduction cannot be assumed as being achievable as BACT, in violation of the "top down" procedures for BACT determination.

Response 10:

As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Therefore, no changes are required to any permit conditions because of these comments.

Comment 11:

The Proposed Permit Contains Objectionable Exemptions from Compliance with Emission Limitation for Nitrogen Oxides, Carbon Monoxide and Volatile Organic Compounds for Periods of Startup and Shutdown

Conditions D.1.3, D.1.4, D.1.5, D.1.12, and D.1.13 contain language, "except during periods of startup or shutdown," that exempt the Rotary Hearth Furnace from compliance with NOX, VOC and CO emission limitations during these times. This language, together with the Applicant's announced intention to have compliance testing delayed for many months in a time-staged startup at less than full capacity, opens the way for the Applicant to argue that a period of "startup" will last many months[4]. Commentors assert that such an operational start should not become the basis of never provided for a stack test at or near 100% of the production rate capacity and will encompass long periods of time of operation at less than the design capacity of the facility. The language of the permit opens the way for the company to claim that limited production rate operation constitutes "startup." This condition and the proposed permit language is unacceptable under EPA's policy on excess emissions and reliance on the "continuous compliance" policy:

"**Although we concur with Region I that PSD permits cannot contain automatic exemptions which allow excess emissions during startup and shutdown,** we do not believe that EPA's policy concerning this issue under PSD is somewhat vague. The exemptions granted under some New Source Performance Standards (NSPS) are not applicable to this issue under PSD. The NSPS are technology based standards that are not directly required for meeting ambient standards."[5]

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[1] *Alternative Control Techniques Document – No Emissions from Iron and Steel Mills,*

[2] *Ibid, Alternative Control Techniques Document, Table 2-2*

[3] *AP-42 for Coal Combustion, Table 1.1-2., p. 1.1-15*

[4] *A June 5, 2002 email from Barry Smith at IDI-SDI to Gurinder Saini stated as follows:*

> *"We will agree to conduct stack testing as is usually the case for new permits and major modifications, However, we request that the time to conduct the stack test be extended to 1 operational year. This is because the first 3 months of the RHF restart will be at very limited production. We will then shut down for about 6 months to check all the equipment out. We will then startup up again with a gradual ramp up in production depending on equipment and product reliability. As such, it may be 1-2 years after the first production test case before we hit high production levels."*

[5] *January 28, 1993 Memorandum on Automatic or Blanket Exemptions for Excess Emissions During Startup, and Shutdowns Under PSD from John B. Rasnic, Director, Stationary Source Compliance Division, EPA Office of Air Quality Planning and Standards to Linda M. Murphy, Director, Air, Pesticides and Toxics Management Division, EPA Region 1, available at:*

EPA clarified and revised its policy in 1999:
"For some source categories, given the types of control technologies available, there may exist short periods of emissions during startup and shutdown when, despite best efforts regarding planning, design, and operating procedures, the applicable emission limitation cannot be met. Accordingly, except in the case where a single source or small group of sources has the potential to cause an exceedance of the NAAQS or PSD increments, it may be appropriate, in consultation with EPA, to create narrowly-tailored SIP revisions that take these technological limitations into account and state that the otherwise applicable emissions limitations do not apply during narrowly defined startup and shutdown periods.

To be approved, these revisions should meet the following requirements:

1. The revision must be limited to specific, narrowly-defined source categories using specific control strategies (e.g., cogeneration facilities burning natural gas and using selective catalytic reduction);

2. Use of the control strategy for this source category must be technically infeasible during startup or shutdown periods;

3. The frequency and duration of operation in startup or shutdown mode must be minimized to the maximum extent practicable;

4. As part of its justification of the SIP revision, the state should analyze the potential worst-case emissions that could occur during startup and shutdown;

5. All possible steps must be taken to minimize the impact of emissions during startup and shutdown on ambient air quality;

6. At all times, the facility must be operated in a manner consistent with good practice for minimizing emissions, and the source must have used best efforts regarding planning, design, and operating procedures to meet the otherwise applicable emission limitation; and

7. The owner or operator's actions during startup and shutdown periods must be documented by properly signed, contemporaneous operating logs, or other relevant evidence."[1]

In particular, the Applicant's process has the potential to have very high carbon monoxide emissions during times when the afterburner is not running as carbon monoxide is generated in large quantities in the process as an intermediate in the reduction of iron oxide. Commentors are concerned in particular about the potential for high ambient carbon monoxide concentrations adjacent to the facility.

Commentors assert that the language excusing the source from compliance during startup and shutdown for CO, VOC and NOX should be removed from the permit. While Commentors are aware that there are conditions under which the afterburner or SNCR would not be operated under startup and shutdown, this can more appropriately be handled through IDEM enforcement discretion and Applicant's recordkeeping and reporting of such incidents.

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http://www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/automati.pdf

[1] *September 20, 1999 Memo to EPA Regional Administrators, Regions I - X from Steven A. Herman, EPA Assistant Administrator for Enforcement and Compliance Assurance and*
Robert Perciasepe, EPA Assistant Administrator for Air and Radiation concerning State Implementation Plans: Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown, available at:
http://www.epa.gov/Region7/programs/artd/air/title5/t5memos/excesem2.pdf

Response 11:

As shown in the earlier pages of this document, the IDEM, OAQ has added a new condition, D.1.8 to cover the operation of RHF during the startup and shutdown as part of BACT. CO ambient concentration would never be considered high even under worst case modeling scenario.

Comment 12:

Applicant's Characterization of Volatile Organic Compound and Carbon Monoxide Emission Rates are Likely to be Unrealistic and Underestimates

The Applicant and IDEM appear to be using coal combustion AP-42 emission factors to calculate both VOC and CO emissions from the Rotary Hearth Furnace. However, AP-42 emission factors will be based on industrial, commercial and steam electric boilers where oxidizing conditions for good combustion are always maintained.

However in the Direct Reduced Iron Rotary Hearth Furnace, a partial reducing atmosphere must be maintained with high concentrations of carbon monoxide (which is a process intermediate for reduction of iron oxide to iron) and likely poor combustion of volatiles in the full/partial reducing atmosphere. Use of AP-42 emission factors reflecting boiler performance will be likely to be significant underestimates of the calculated uncontrolled emission rates for carbon monoxide and VOCs. In addition, such conditions may also cause polycyclic aromatic matter uncontrolled emissions to be higher than predicted otherwise for coal-fired boiler performance. More realistic emission factors reflecting full or partial reducing atmospheres in the Rotary Hearth Furnace should be incorporated into calculations of uncontrolled CO, VOC and PAH emissions.

Applicant Has Failed to Properly Characterize Hazardous Air Pollutant Emissions from Mercury and from Practices Arising from the Use of EAF Furnace Dust and Other Mill Wastes

Applicant's characterization of hazardous air pollutant emissions relies solely on AP-42 emission factors for coal combustion. However, this facility is asking to use significant amounts of electric arc furnace dust and other mill wastes in the Rotary Hearth Furnace. Failure to have detailed example toxic constituent analysis for the EAF dust and other wastes will cause the estimates of HAPs/toxics to be significantly understated when the Applicant relies solely on AP-42 for coal combustion. This mis-characterization of toxic emissions, including lead, inherent with ignoring the toxic inputs from EAF dust and other wastes must not be allowed in the proposed permit. EAF dust is, after all, regarded as a hazardous waste capable of harming the environment. Although recycled EAF dust is exempted back to the point of generation by RCRA rules this doesn't mean that the waste is somehow linguistically detoxified. The failure of IDEM to require example constituent analysis for EAF dust and other wastes contemplated by the permit for process addition and recycling seriously undermines as underestimates all of the HAP and lead emission characterizations of the proposed permit to the point of violation of requirements for a complete application under IDEM rules.

Because of serious issues of mercury contamination, Commentors assert that IDEM must also determine expected mercury throughputs and emissions from the process. Because of afterburner control of VOCs and CO in the process, it is likely that most of the mercury generated from coal used in the process will be transformed to biologically active forms (chlorides, sulfates, and oxides). At 0.25 PPM of mercury in coal, the mercury input to the process just from coal for burner combustion would be about 36 lbs per year. This would not account for mercury in the DRI feedstock matrix from both coal and from iron ore. Although some limited mercury control will occur in the subject facility's baghouse, the high exhaust temperatures mitigate against high efficiency of mercury control. This issue must be evaluated for the proposed facility.

Response 12:

As stated earlier in this document, the Permittee has withdrawn the request to replace up to 20 burners to dual fuel burners to fire coal or natural gas in the Rotary Hearth Furnace. Further the issue of HAP emissions from the EAF baghouse dust has been dealt in detail in responses to comments by Chales K. and Steve L. Therefore, no changes are required to any permit conditions because of these comments.

Comment 13:

The Particulate/Opacity Emission Compliance Monitoring Requirements Are Unacceptable

IDEM should not be giving the Applicant the choice between compliance monitoring by a visible emission observer, continuous opacity monitoring system and bag leak detection system and exemption from quarterly inspections as it does in D.1.18. At a 3% opacity, visible emission observer error will be high. The permit should be amended to require a continuous opacity monitoring system, bag leak detection system and quarterly inspections for all baghouse facilities countenance in the proposed permit. Pinhole leaks that might escape detection by the opacity monitoring system may jeopardize compliance with a BACT PM level of 0.0052 grains/DSCF (in fact, this limit should be incorporated as a legally enforceable emission limitation in the proposed permit for the two subject baghouses on the RHF. Annual inspections with flourescent compounds may catch leaks not caught by any continuous monitor or bagleak detection system.

Response 13:

The condition D.1.1 specifies the enforceable limit for PM emissions from the two baghouses at the RHF. The issue of the compliance monitoring options has been dealt in response 12 for the comments made by Charlie K. earlier in this document. No changes are required to any permit conditions.

Comment 14:

IDEM Must Provide for Delayed Effective Date for any Permit Approval

Given that Commentors raise important technical and legal issues concerning PSD BACT for the subject facility's proposed major modification permit, IDEM must ensure that any final decision to issue such a permit is subject to a 30 day delayed effective date beyond the date that IDEM makes the decision and notices Commentors, consistent with binding requirements on IDEM PSD permit issuance for delegated programs at 40 CFR Sec. 124.19.

Response 14:

The IDEM, OAQ in accordance with the standard operating procedure changed the condition B.2 to show that the effective date of permit will be 33 days from the date of issuance.

Comments by Michel Walter

Written comments were received from Mr. Michael Walter on November 06, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with strikeout and that added is shown in bold) are as follows:

General Comments

In my opinion, the application for a significant source modification in the above noted matter [033-15955-00076] should be denied. [emphasis in original]

Comment 1:

In the first place, it is my understanding that there is no Part 70 permit to be modified. How IDEM could allow a facility of this size to begin operating without completing the initial permit process is utterly beyond my comprehension and it calls into question the legality of any action to grant so called "modification."

Response 1:

Please see the response 1 for the comments made by Charles K in this regard. This response explains in detail the working of permit programs. Further information can be obtained in this regard from the IDEM, OAQ website at:

www.in.gov/idem/air

Comment 2:

Next the applicant proposes to move from a relatively clean fuel, natural gas to an undeniably dirtier one, coal. That is, the applicant is asking to make the air dirtier. I am under the impression that current law demands the "prevention of significant deterioration" in air quality. How, therefore, can the applicant be allowed to increase the discharge of pollutant in the air?

It would also appear to me that the requirement that a facility use the "best available control technology" would be violated by allowing it to move from a cleaner technology to a dirtier one.

Finally, the increased amounts of heavy metals proposed for discharge from the modified facility settle out into the surrounding agricultural land and water. It is my understanding that one of DeKalb County waters on the new 303 (b) list of impaired waters, the Metcalf Drain, is near the applicant's facility. It seems likely that air pollutants from Iron Dynamics will quickly become water pollutants as well.

Thanks to IDEM's laxity in enforcing air quality standards against facilities such as Auburn Foundry, DeKalb County has the worst air quality of any so called "rural" area in the state; and now yet another polluter proposes to make our air even worse.

Please spare yourselves further enforcement headaches and spare the people of DeKalb County further health hazards: Deny the application.

Please note that while I am a licensed Indiana Attorney (#1543-17), I am making these comments strictly for myself as a citizen, and not on behalf of a client. I wish to be notified of all hearings and final determinations in this matter.

Response 2:

The coal combustion process in up to 20 burners is no longer part of this permit as the applicant has withdrawn that request. Therefore, the commentator's concerns about the use of dirtier fuel are no longer applicable to this modification. The emissions of HAPs are discussed in detail in responses previously in this document. The IDEM, OAQ cannot deny a permit as long as it meets the applicable requirements and complies with applicable regulations. This permit contains the applicable conditions and compliance requirements for this operation. No changes are required to any permit conditions.

The IDEM, OAQ revised the following items in the TSD for this permit and are documented here. The calculations for emissions have changed because the replacement of burners with dual fuel burners is no longer part of this project. Therefore a revised appendix A to the addendum to the TSD is attached to this addendum.

Protocol for Incorporating Federally-Approved Permits into Title V Operating Permits

I. Scope

This protocol describes the procedures to be used by the Indiana Department of Environmental Management (IDEM) when incorporating the provisions of previously issued permits into Title V Operating Permits and for combining new source review permits with Title V Operating Permits. These permits include all those approved under 40 CFR 51 or 40 CFR 70 and those issued under 40 CFR 52 or Title V of the Clean Air Act, and the corresponding Indiana rules. Individual provisions of previously issued permits may be incorporated as originally stated, revised, or deleted as described by these procedures. Indiana may supercede previously issued permits in whole or in part under these procedures, if the terms and conditions of the previously issued permits are carried over in to the combined permit and identified, as required under II.A.2 of this protocol.

II. Terms

In the situations covered in the Scope section, above, IDEM will issue Title V permits in accordance with the following:

A. **Permit Language Requirements** the following are permit language requirements which will indicate a combined permit, show the authority for such conditions, identify non-applicable conditions, and supersede previous permits.

1. Combined New Source Review (NSR)/Title V permits shall state that the combined permit serves as both a Title V and a NSR permit (specifying minor NSR, major nonattainment area NSR, or PSD as appropriate).

2. For each NSR permit term or condition, IDEM will indicate the permit number and the specific NSR program under which it was issued in the permit condition and the Technical Support Document (TSD) for the Title V permit. This citation is not necessary for applicable requirements that are established outside of a NSR permit program, except as otherwise required by Title V.

3. IDEM will identify, in the TSD for the combined NSR/ TV permit, any previously established applicable requirements that will be revised or deleted and the basis for the revisions or deletions.

4. Pursuant to 326 IAC 2-1.1-9.5 permits will indicate:

    a. that except as provided in IC 13-15-3-6(a), permits are effective for a term not to exceed five (5) years.

    b. that any condition established in a permit issued pursuant to a permitting program approved into the Indiana SIP shall remain in effect until:

(1) the condition is modified in a subsequent permit action[1]; or

(2) the emission unit to which the condition pertains permanently ceases operation.

Process Requirements the following process steps will be taken with every combined permit.

5. The issuance, renewal or revision of terms and conditions in combined NSR/Title V permits must satisfy the substantive and procedural requirements of 40 CFR Part 52, Title V, and the Indiana SIP, as applicable.

6. The public notice shall state that both a Title V and a NSR action are occurring simultaneously. A TSD will accompany the NSR/Title V permit at public notice. The TSD will state that the permit serves as the Title V and the NSR permit. It also will identify new or revised conditions from previous permits issued pursuant to a permitting program approved into the Indiana-SIP.

3. IDEM's use of a combined permit shall not affect the ability of any person to appeal a PSD permit to EPA's Environmental Appeals Board (EAB) in accordance with 40 C.F.R. Part 124. Appeal to the EAB of a PSD permitting action may result in a stay of the effectiveness of the permit for purposes of Title I. Appeal of the permit, for purposes of Title I, and review and objection of the permit for purposes of Title V, shall follow the procedures at 40 C.F.R. Part 124, IC 13-15-6 appeal of agency issue or deny permit, and 40 C.F.R. Part 70, respectively.

III. Approval

Region V of the USEPA and IDEM hereby agree to the terms of this protocol.

Pamela Blakley , Chief
Permits and Grants Section
Air and Radiation Division
Region V, EPA

Paul Dubenetzky, Chief
Air Permits Branch
Office of Air Quality
IDEM

January 16, 2002

[1] The Title V permit will not revise the old construction permit. When the condition is carried over from the NSR permit to the TV, it can then be revised following the appropriate modification procedures.

Appendix A: Emissions Calculations
Future Potential to Emit Calculations
Company Name: Iron Dynamics, Inc.
Address City IN Zip: 4500 County Road 59, Butler, Indiana 46721
CP: 033-15955
Plt ID: 033-00076
Reviewer: GS
Date: 05/23/2002

Note: Where AP-42 emission factors are used, they are based on

Rotary Hearth Furnace (RHF) emissions

Future Potential Emissions

PM/PM10 emissions by using EAF dust as supplemental fuel

The RHF is equipped with a baghouse to control PM/PM10 emissions. The exhaust from the baghouse is limited to 0.0052 grain/dscf and the air flow volume of 300,000 dscf per minute*. This limitation is unaffected by addition of EAF Baghouse dust as supplemental fuel in the RHF.

Future PTE for PM/PM10

= 0.0052 gr/dscf X 300,000 dscf/min X 1 lb/7000grain X 60 min/hour X 8760 hour / year X 0.0005 ton/lb

= 58.6 tons/year

* Limits based on CP 033-8091-00043 as part of the BACT determination for the RHF

PM/PM10 emissions by using coal as fuel in the RHF upto 20 burners

The maximum combined heat input capacity for the 20 burners is 140 MMBtu/hour. When fired with the coal with a heat content of 8500 Btu/lb or 17 MMBtu/ton, the hourly coal usage can be calculated as:

= 140 MMBtu/hour / 17 MMBtu/ton

= 8.2 tons/hour

= 8.2 tons/hour X 8760 hours/year = 72141.2 tons/year

The uncontrolled PM/PM10 emissions from the coal burning in the 20 burners

PM

= 72141.2 tons/year X (10 X 5) lb/ton X 0.0005 ton/lb

= 1803.5 tons/year

The PM emission factor is based on AP-42 Vol 1 Table 1.1-4 as 10 X A lb/ton where A is the % ash content.
The A value is upto 5% for the coal to be used at the RHF.

PM10

= ((72141.2 tons/year X 2.3 X 5 lb/ton) + (140MMBtu/hour X 8760 hour/year X (0.1X0.8-0.03) lb/MMBtu)) X (

= 445.4719 tons/year

The PM10 emission factor is based on AP-42 Vol 1 Table 1.1-4 and Table 1.1-5 as 2.3 X A lb/ton where A is the % ash
The A value is upto 5% for the coal to be used at the RHF. The condensable component is (0.1X sulfur - 0.03).
The sulfur content of the coal is 0.8%.

These emissions will be controlled by the existing RHF baghouse. The controlled PM/PM10 emissions from the baghou are based on the outlet grain loading and air flow volume. Therefore, the controlled emission rate for the baghouse will not change.

SO2

The manufacturer has gaureenteed a SO2 emission rate of 78 lb/hour.
Therefore, the potential to emit for 8760 hours per year is as follows:
= 78 lb/hour X 8760 hour/year X 0.0005 ton/lb

= 341.6 tons/year

The uncontrolled SO2 emissions from burning coal in upto 20 burners is calculated as follows:

= 72141.2 tons/year X (35 X 0.8) lb/ton X 0.0005 ton/lb

= 1010.0 tons/year

Scenario 1
The emission factor for the coal burning is based on AP-42 for dry bottom wall fired units.

The SO2 control (Lime Injection) has a efficiency of 80%. Therefore, the controlled emissions will be:

= 1010.0 X (1-0.8)

= 202.00

The total future potential to emit for SO2 is:

= 341.6 + 202.0 tons/year

= 543.64 tons/year

= 124.12 lb/hour

Scenario 2
The SO2 control (using at least 2 tons/hour of EAF dust as supplemental feedstock) has a efficiency of 90%. Therefore, the controlled emissions will be:

= 1010.0 X (1-0.9)

= 101.00

The total future potential to emit for SO2 is:

= 341.6 + 101.0 tons/year

= 442.64 tons/year

= 101.06 lb/hour

<u>NOx</u>

The manufacturer has gaureenteed a NOx emission rate of 120 lb/hour.
Therefore, the potential to emit for 8760 hours per year is as follows:

= 120 lb/hour X 8760 hour/year X 0.0005 ton/lb

= 525.6 tons/year

The uncontrolled NOx emissions from burning coal in upto 20 burners is calculated as follows:

= 72141.2 tons/year X 7.4 lb/ton X 0.0005 ton/lb

= 266.9 tons/year

The emission factor for the coal burning is based on AP-42 for dry bottom wall fired units.

The NOx control (SNCR) has an efficiency of 50%. Therefore, the controlled emissions will be:

= 266.9 X (1-0.5)

= 133.46

The total future potential to emit for NOx is:

= 525.6 + 133.4 tons/year

= 659.06 tons/year

VOC

The VOC emissions from RHF are limited to 6.23 lb/hour.
Therefore, the potential to emit for 8760 hours per year is as follows:
= 6.23 lb/hour X 8760 hour/year X 0.0005 ton/lb

= 27.3 tons/year

The VOC emissions from burning coal in upto 20 burners is calculated as follows:

= 72141.2 tons/year X 0.06 lb/ton X 0.0005 ton/lb X (1-99% control efficiency of afterburner)

= 0.022 tons/year

= 0.005 lb/hour

The 0.06 lb/ton is the controlled limit form the permit CP 033-8091-00043.

The total future potential to emit for VOC is:

= 27.3 + 0.022 tons/year

= 27.31 tons/year

= 6.23 tons/year

CO

The CO emissions from RHF are limited to 146.8 lb/hour.
Therefore, the potential to emit for 8760 hours per year is as follows:
= 146.8 lb/hour X 8760 hour/year X 0.0005 ton/lb

= 643.0 tons/year

The CO emissions from burning coal in upto 20 burners is calculated as follows:

= 72141.2 tons/year X 0.5 lb/ton X 0.0005 ton/lbX (1-99% control efficiency of afterburner)

= 0.2 tons/year

The emission factor for the coal burning is based on AP-42 for dry bottom wall fired units.

The total future potential to emit for CO is:

= 643.0 + 0.2 tons/year

= 643.16 tons/year

= 146.84 lb/hour

Lead (Pb)

The Permittee had conducted extensive research for Pb emissions. This research was conducted by Maumee Research and Engineering, Inc. The report documented the PbO emission rate of 0.06 lb/hour. The corrected value using the molecular weights for emissions of Pb is 0.0557 lb/hour
Therefore, the potential to emit for 8760 hours per year is as follows:

= 0.0557 lb/hour X 8760 hour/year X 0.0005 ton/lb

= 0.24 tons/year

= 0.0557 lb/hour

The Controlled Pb emissions from burning coal in upto 20 burners is calculated as follows:

= 72141.2 tons/year X 4.2 E-4 lb/ton X 0.0005 ton/lb

= 0.015 tons/year

= 0.0035 lb/hour

The emission factor for the coal burning is based on AP-42 for dry bottom wall fired units.

The total future potential to emit for Pb is:

= 0.24 + 0.015 tons/year

= 0.26 tons/year

= 0.06 lb/hour

HAPs

The HAP emissions from the combustion of coal in the RHF in up to 20 burners is shown below. These calculations are based on AP 42 emission factors from Table 1.1-14 and 1.1-18. The emission factors are for the controlled sources.

The emissions are based on the coal usage of 72141.2 tons per year.

HAP	Emission Factor (lb/ton)	Emissions (tons/year)
Acetaldehyde	5.70E-04	0.021
Acrolein	2.90E-04	0.010
Arsenic	4.10E-04	0.015
Benzene	1.30E-03	0.047
Benzyl Chloride	7.00E-04	0.025
Beryllium	2.10E-05	0.0008
Cyanide	2.50E-03	0.090
Isophorone	5.80E-04	0.021
Manganese	4.90E-04	0.018
Mercury	8.30E-05	0.003
Methyl Chloride	5.30E-04	0.019
Methyl Ethyl Ketone	3.90E-04	0.014
Methylene Chloride	2.90E-04	0.010
Nickel	2.80E-04	0.010
Propionaldehyde	3.80E-04	0.014
Selenium	1.30E-03	0.047
Total		0.365

Note: in the above list the HAP emissions in insignificant quantities have not been included

RHF additional baghouse to control fugitive emissions

Future Potential Emissions

PM/PM10

The additional baghouse has an air flow rate of 100,000 dscfm. The outlet grain loading shall be less than 0.0052 grains per dscf. Therefore, the PM/PM10 emissions are as follows:

Future PTE for PM/PM10

= 0.0052 gr/dscf X 100,000 dscf/min X 1 lb/7000grain X 60 min/hour X 8760 hour / year X 0.0005 ton/lb

= 19.5 tons/year

Lead

The emission rate for Lead from the new baghouse is calculated as follows:

= 19.5 tons/year X 0.0557 lb/hour / 13.4 lb/hour

= 0.081 tons/year

= 0.019 lb/hour

Where:
19.5 tons/year is the PM/PM10 emission rate
0.0557 lb/hour is the Pb emission rate from main baghouse
13.4 lb/hour is the hourly PM/PM10 emission rate from the main baghouse

Submerged Arc Furnace additional flowrate for the baghouse

Future Potential Emissions

PM/PM10

The Permittee is proposing 100,000 dscfm additional air flow for this baghouse. The outlet grain loading is limited to 0.0032 grains/dscf. The air flow from SAF baghouse will be 300,000 dscfm.
Therefore, the PM/PM10 emissions are as follows:
Future PTE for PM/PM10

= 0.0032 gr/dscf X 300,000 dscf/min X 1 lb/7000grain X 60 min/hour X 8760 hour / year X 0.0005 ton/lb

= 36.0 tons/year

Appendix B - Air Quality Analysis

Source Background and Description

Source Name:	Iron Dynamics, Inc.
Source Location:	4500 County Road 59, Butler, IN 46721
County:	Dekalb
SIC Code:	3312
Operation Permit No.:	033-12614-00076
Operation Permit Issuance Date:	Not yet issued
Significant Source Modification No.:	033-15955-00076
Modeling Reviewer:	Steven Sherman

Introduction

Iron Dynamics (IDI) has applied for a Prevention of Significant Deterioration (PSD) Permit to modify a Rotary Hearth Furnace near Butler in DeKalb County, Indiana. The proposed site will be located at Universal Transverse Mercator (UTM) coordinates 674000 East and 4582000 North. The proposed modification will consist of adding electric arc furnace (EAF) dust from Steel Dynamics, Inc. to the Rotary Hearth Furnace (RHF)and fire up to 20 RHF burners with coal. A baghouse will be added to control the RHF fugitive dust within the shop. DeKalb County is designated attainment for all criteria pollutants. All air quality modeling and analysis treats the proposed modification as a new major source.

Keramida prepared the permit application for IDI. The Office of Air Quality (OAQ) received the permit application on May 2, 2002. Modeling revisions to the application were received on June 2002. This document provides the OAQ review of the modeling section of the permit application.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in this document in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates.

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used a description of the model used in the analysis, and the receptor grid utilized for the analyses.

C. Determine the background (existing) air quality levels, the significant impact area (if one is established) the area of potential impact of the source's emissions and the need for more refined (cumulative) modeling.

D. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or PSD increment if the applicant exceeds significant impact levels.

E. Perform an analysis of any air toxic compound with a health risk factor on the general population.

F. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park, which is more than 100 kilometers from the proposed site.

G. Summarize the Air Quality Analysis

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Analysis Summary

The air quality impact analysis determined that no refined modeling would be required since pollutant concentrations did not exceed significant impact levels. Hazardous Air Pollutant (HAP) concentrations were all below .5% of the Permissible Exposure Limit (PEL). Based on these modeling results, the proposed IDI Plant will not have a adverse impact to air quality.

Section A

Pollutants Analyzed for Air Quality Impact

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1. Particulate Matter less than 10 microns (PM_{10}), Sulfur Dioxide (SO_2), Nitrogen Dioxide (NO_2), and Carbon Monoxide (CO), and Beryllium are the pollutants that will be emitted from the electric generation facility. Therefore, an air quality analysis is required for these pollutants, which exceeded significant emission rates shown in Table 1:

TABLE 1
Significant Emission Rates for PSD

POLLUTANT	SOURCE EMISSION RATE (Facility Totals)	SIGNIFICANT EMISSION RATE	PRELIMINARY AQ ANALYSIS REQUIRED
	(tons/year)	(tons/year)	
PM-10	88.3	15	Yes
SO2	168.8	40	Yes
NO_x	634.4	40	Yes
VOC	28.24	40	No
CO	631.5	100	Yes
Lead	0.336	0.6	No
Beryllium	.0008	0.0004	Yes
Mercury	.003	0.1	No

Section B

Stack Height Compliance with Good Engineering Practice (GEP)

Stacks should comply with GEP requirements established in 326 IAC 1-7-1. If stacks are lower than GEP, the modeled concentrations may be significantly higher due to aerodynamic downwash. Stacks taller than 65 meters (213 feet) are limited to GEP, the stack height for establishing emission limitations. The GEP stack height takes into account the distance and dimensions of nearby structures, which would affect the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width. A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

Since the stack heights of the proposed facility were below GEP stack height the effect of aerodynamic downwash was accounted for in the air quality analysis for the proposed facility.

Meteorological Data

The meteorological data used in the Industrial Source Complex Short Term (ISCST3) model consisted of years 1990 through 1994 surface data from the Fort Wayne Weather Service station merged with the mixing heights from Dayton, Ohio station. The meteorological data was preprocessed into ISCST3 ready format using U.S.EPA's PCRAMMET and provided to Keramida by the Indiana Department of Environmental Management (IDEM).

Model Description

Keramida and OAQ used the ISCST3 model, version 02035 to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W "Guideline on Air Quality Models". The Auer Land Use Classification Scheme was used to determine the land use in the area. The area is considered primarily rural; therefore, a rural classification was used.

Receptor Grid

OAQ modeling utilized the same receptor grids generated by Keramida, which extended around the property line in 100-meter increments. A large grid consisting of more than 600 receptors out to a distance of 10,000 meters was utilized.

Section C

Significant Impact Level/Significant Impact Area (SIA) and Background Air Quality Levels

Keramida and OAQ performed an air quality modeling analysis to determine if the source exceeded the significant impact levels (concentrations). If the source's concentrations exceed these levels, IDEM and USEPA guidance requires further air quality analysis. Refined modeling for NO_2 was not required because the results any of the analyses did not exceed significant impact levels.

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Table 2
Significant Impact Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (ug/m^3)	SIGNIFICANT IMPACT LEVEL (ug/m^3)	MONITORING LEVEL ug/m3)	REFINED AQ ANALYSIS REQUIRED
PM_{10}	24 Hour	8.87	5	10	Yes
PM_{10}	Annual	.73	1	- - -	No
NO_2	Annual	0.75[1]	1	14	No
CO	1 Hour	12.16	2000	- - -	No
CO	8 Hour	4.27	500	575	No
SO_2	3 Hour	40.38	25	- - -	Yes
SO_2	24 Hour	18.32	5	13	Yes
SO_2	Annual	.77	1	- - -	No
Beryllium	8-hour[2]	.00051	N/A	0.001	No

[1]U.S. EPA NO2/NOx ratio was used to determine NO2 impacts based on the NOx emission rates. 40 CFR 51, Appendix W – Guideline on Air Quality Models.
[2] There is no air quality standard for beryllium

Part D

Modeling for the NAAQS and PSD Increment

Emission inventories of PM_{10} sources in Indiana within a 50 kilometer radius of the site were taken from the OAM emission statement database as required by 326 IAC 2-6. Sources taken from the NAAQS and Increment inventories were run in the SCREEN3 model. If these sources had no significant impact at all using the SCREEN3 model, they were not included in the final analyses. OAM modeling results are shown in Table 3. Maximum concentrations of PM_{10} for the 24-hour time-averaged periods were below their respective NAAQS limit and further modeling was not required.

Table 3
NAAQS Analysis

POLLUTANT	AVERAGING PERIOD	Year	Modeled Impact (ug/m3)	Background Ug/m3)	Total	NAAQS (ug/m^3)
PM_{10}	Annual	1990	5.0	27.4	32.4	50
PM_{10}	24 hour	1993	33.4	66	99.4	150
SO_2	3 Hour	1992	171.5	91.7	263.2	1300
SO_2	24 Hour	1992	50.2	41.9	92.1	365
SO_2	Annual	1992	3.1	7.9	11.0	80

Maximum allowable increases (PSD increments) are established by 326 IAC 2-2 for NO_2, SO_2 and PM_{10}. This rule limits a source to no more than 80 percent of the available PSD increment to allow for future growth. 326 IAC 2-2-6 describes the availability of PSD increment and maximum allowable increases as increased emissions caused by the proposed major PSD source did not exceed 80% of the available maximum allowable increases over the baseline concentrations for sulfur dioxide and particulate matter. Table 4 shows the results of

the PSD increment analysis for PM_{10}. No violations of 80 percent of the PSD increment for PM_{10} occurred and no further modeling was required. Although some receptors totalled more than 80% of the increment most of this was consumed prior to this project. Table 5 shows the results of this modeling.

Table 4
Increment Analysis

POLLUTANT	AVERAGING PERIOD	Year	Modeled Impact (ug/m3)	Increment (ug/m^3)
PM_{10}	Annual	1990	4.8	17
PM_{10}	24 hour	1993	27.2	30
SO_2	3 Hour	1992	171.5	512
SO_2	24 Hour	1992	50.2	91
SO_2	Annual	1992	3.1	20

Table 5
Additional PM10 Increment Analysis

Year	Date	Modeled Impact Before Modification (ug/m3)	Modeled Impact After Modification (ug/m3)	Remaining Increment (ug/m3)	Increment Consumed (ug/m^3)	Within 80% of Increment
1991	November 10	24.9	23.5	5.2	1.4	Yes
1992	March 5	27.7	27.2	2.2	0.0	Yes
1992	October 30	26.5	26.5	2.8	0.0	Yes
1994	July 19	25.3	19.1	8.7	6.2	Yes

Part E

Hazardous Air Toxics Analysis and Results

The OAQ presently requests data concerning the emission of 189 HAPs listed in the 1990 Clean Air Act Amendments (CAAA) which are either carcinogenic or otherwise considered toxic and may be used by industries in the State of Indiana. These substances are listed as air toxic compounds on the State of Indiana, Department of Environmental Management, Office of Air Quality's construction permit application Form Y. Any HAP emissions are subject to toxic modeling analysis.

As a precautionary measure, Keramida and OAQ modeled the toxics using ISCST3 and compared the maximum-modeled 8-hour concentration with the 0.5% PEL value. The maximum-modeled concentrations are shown in Table 6.

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Table 6
Air Toxic Analysis

Toxic Compound	Gram/second	Conc. (ug/m3)	0.5% of PEL (ug/m3)
Acetaldehyde	.00059	.00487	1800
Acrolein	.0003	.00248	1.25
Arsenic	.00086	.00644	0.05
Benzene	.0014	.01156	16.0
Benzyl Chloride	.00072	.00595	25.0
Beryllium	.0001	.00051	0.01
Bromoform	.00004	.00033	25.0
Cadmium	.00099	.00074	0.025
Carbon Disulfide	.00013	.00107	300
2-Chloro-acetophorone	.000007	.00006	1.5
Chlorobenzene	.000023	.00019	1750
Chloroform	.00006	.0050	1200
Chromium	.0056	.00892	2.5
Cobalt	.0015	.00085	0.5
Cumene	.0000055	.00005	1225
Cyanide	.0026	.02131	25.0
2,4-Dinitrotoluene	.00000029	.0000024	7.5
Dimethyl sulfate	.00005	.00041	25.0
Ethylbenzene	.000097	.0008	2175
Toxic Compound	Gram/second	Conc. (ug/m3)	0.5% of PEL (ug/m3)
Ethyl chloride	.000043	.00036	13000
Ethylene dichloride	.000041	.00034	1000
Ethylene dibromide	.0000012	.00001	950
Formaldehyde	.0383	.31635	4.65
Hexane (isomers)	.000069	.00057	9000
Isophorone	.0006	.00495	700
Manganese	.0776	.01887	25.0
Mercury	.00055	.0111	0.5
Methyl bromide	.00016	.00136	400
Methyl chloride	.00055	.00453	1050
MEK	.0004	.00333	2950
Methyl hydrazine	.000176	.00145	1.75
Methyl methacrylate	.00002	.00017	2050
Methylene chloride	.0003	.00248	8700
Nickel	.0065	.0078	5.0
Phenol	.0000165	.00014	95
Selenium	.00135	.01107	1.0
Styrene	.000026	.00021	2100
Tetrachloroethylene	.000044	.00037	3350
Toluene	.00025	.00205	3750
Xylene	.000038	.00032	2175
Vinyl acetate	.000008	.00006	150

None of HAPs exceed 0.5% of the PEL.

Part E

Additional Impact Analysis

All PSD permit applicants must prepare additional impacts analysis for each pollutant subject to regulation under the Act. This analysis assesses the impacts on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant from the source. The IDI PSD permit application provided an additional impact analysis performed by Keramida.

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Economic Growth

The new and modified baghouses will result in minimal and temporary increase in construction activities. No long-term impact or growth is expected from these changes.

Soils and Vegetation Analysis

A list of soil types present in the general areas was determined. Soil types include clay glacial tills including, Blount Morley and Pewamo.

No sensitive aspects of the soil and vegetation in the area surrounding the facility have been identified. The secondary NAAQs, which establish the ambient concentration levels to protect soil or vegetation, will not be violated.

Federal Endangered Species Analysis

Federally endangered or threatened species are listed by the U.S. Fish and Wildlife Service; Division of Endangered Species for Indiana and includes 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 specie of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The proposed facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial and residential activities in the area.

Federally endangered or threatened plants as listed by the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana list two threatened and one endangered species of plants. The endangered plant is found along the sand dunes in northern Indiana while the two threatened species do not thrive in industrialized and residential areas. The proposed facility is not expected to impact the area further.

Additional Analysis Conclusions

The nearest Class I area to the electric generation facility is Mammoth Cave National Park located more than 200 km to the south in Kentucky, well outside the 100 km Class I range. No additional analysis is required.

Finally, the results of the additional impact analysis conclude the operation of the IDI facility will have no significant impact on economic growth, soils, vegetation or visibility in the immediate vicinity or on any Class I area.

Part F

Summary of Air Quality Analysis

IDI has applied for a PSD construction permit to construct an electric generation facility near Butler, Indiana. Keramida prepared the PSD application. DeKalb County is designated as attainment for all criteria pollutants. PM_{10}, SO_2, NO_2, VOC, beryllium and CO emission rates associated with the proposed electric generation facility exceeded the respective significant emission rates. Modeling results taken from the latest version of the ISCST3 model showed PM_{10}, SO_2, and CO impacts were predicted to be more than the significant impact levels. Refined modeling was not required. An air toxic analysis was preformed as a precautionary measure and no modeled concentrations were above the 0.5% of PEL. The nearest Class I area is Mammoth Cave National Park in Kentucky, approximately 200 kilometers to the south of the source. Additional impact analysis showed no significant impact on economic growth, soils, vegetation or visibility in the areas surrounding the proposed electric generation facility.